WORKING PAPER

Working Paper No.86

Some Aspects of Agro-economic Transformation in Tamil Nadu - A Case Study of Enathimelpakkam Village

by

V. Chandrasekara Naidu

MADRAS INSTITUTE OF DEVELOPMENT STUDIES
79, SECOND MAIN ROAD, GANDHI NAGAR, ADYAR
MADRAS 600 020

Working Paper No.86

Some Aspects of Agro-economic Transformation in Tamil Nadu - A Case Study of Enathimelpakkam Village

by

V. Chandrasekara Naidu

MADRAS INSTITUTE OF DEVELOPMENT STUDIES
79, Second Main Road, Gandhinagar,
Adyar, MADRAS 600 020

SEPTEMBER, 1988

Acknowledgements

I am grateful to A. Jayaraman and G. Shanmugam who helped me in various ways both in the collection and tabulation of field data.

I am also grateful to Dr. C.T. Kurien, Dr. Paul.P. Appasamy, C. Annadurai and the two referees for their critical comments and helpful suggestions on the earlier drafts of this paper. However, any errors that still remain are solely mine.

Table of Contents

		Page No.
I.	Introduction	1 - 5
II.	Demographic, Social and Occupational Structure of the Village	6 - 25
III.	Land and Livestock Ownership and Tenancy	26 - 54
IV.	Agricultural Transformation	55 - 105
V.	Non-agrarian Economy of the Village	106 - 110
VI.	Implementation of Public Programmes and Utilisation of Common Property Resources	111 - 122
VII.	Poverty and Income Distribution	123 - 138
VIII.	The changing Socio-Economic Scene of the Village and Conclusions	139 - 145
	Appendices	146 - 154
	Notes and References	155 - 158

****

Some Aspects of Agro-economic Transformation in Tamil Nadu - A Case Study of Enathimelpakkam Village

Chapter I
Introduction

Enathimelpakkam is a small revenue village located in Gummidipundi Taluk of Chingleput district in Tamil Nadu. The Village is situated about 45 kilometres (kms) north of Madras city, the state capital and 4 kms east of Gummidipundi.[1] The criterion used in the selection of this village was the rapid transformation of its traditional agriculture into a modern one during the early 1970s. By the mid-seventies the village came to have a fully modernised (introduction of new-seed-fertilizer-water-technologies) agricultural sector with all its complementarities. Also this Village was one of the few villages in the taluk which received huge amounts of public assistance, not only from the state government of Tamil Nadu but also from international development agencies like the European Economic Community (EEC).

While the village is dominated demographically by the scheduled castes economically it is dominated by the upper caste Mudaliars. Over the years the transformation of agriculture has also been associated with the transfer of economic power from the Chettiars to the Mudaliars in the village. However, modernisation of agriculture and the heavy investments made by the government for the economic development of the village did not lead to any significant

reduction in poverty. Further, despite its proximity to the metropolitan city of Madras and to the industrial town of Gummidipundi the village has not experienced any major changes in its occupational structure even over a period of time. Thus, this study aims at capturing the processes responsible for the prevalence of poverty in the village despite the transformation of traditional agriculture and the inflow of huge amounts of public assistance over a period of time.

Methodology

The study has adopted two reference periods. For the study of dynamic development of agriculture our reference period was from 1970-71 to 1985-86. And, for the collection of current data especially on demography, land and livestock ownership and tenancy, poverty and income distribution and the non-agrarian economy of the village, the reference period was the agricultural year of 1985-86. However, the actual survey was conducted in the year 1986-87. This was done with the intention of collecting the relevant data for the full agricultural year of 1985-86. For the collection and analysis of data the household remained as the reference unit.

To start with, we undertook a census survey of households in the village, mainly to collect data on demography and asset ownership. While we could collect fairly reliable data on the demographic features of the village data on asset ownership of the individual households was

less reliable compared with the village aggregate data provided by published sources. Nevertheless, the first round of the census survey helped us to establish some rapport with the households in the village. In the next stage of data collection, we collected the available relevant data from the village records and census publications of the Government of India. Scrutiny of the village records with the help of the village officials not only helped us to identify the individual ownership of land in the village but also the transactions between different groups of households over a period of one and a half decades, starting from 1970-71 uptil 1985-86. We also cross-checked the data with the ex-officials of the village who were more knowledgeable about land ownership. Armed with the data available from census survey and the village records we conducted a second census survey of the households in the village but with some more questions added this time, especially on land and livestock sales and purchases and changes in occupation and tenancy etc. The second census survey also enabled us to cross check the information collected from the village records and published sources directly with the concerned households in the village. By the time, we completed our second census survey we had acquired a very reliable data base on demography, changes in land and livestock ownership and distribution, workforce and occupational structure of the village, etc.

In the final phase of our survey we undertook a random sample survey of households. For this purpose, we had stratified the households based on their major sources of

income and land ownership. This was done with the help of the data collected earlier through the census surveys. However, the households of the village were classified in the following 8 occupational groups: 1) big farmers (those who own 10 acres and above); 2) medium farmers (owning 5.01 to 9.99 acres); 3) small farmers (owning between 2.51 and 5.00 acres); 4) marginal farmers (owning up to 2.50 acres); 5) tenants; 6) agricultural labourers; 7) non-agricultural labourers; and 8) artisanal and service households. The sample survey was undertaken mainly to collect data on a) costs of cultivation, b) labour utilisation, c) production and productivity, d) incomes earned from different sources, e) expenditures incurred and f) indebtedness of the households.

After processing both the census and sample survey data, we conducted some special enquiries with well-informed elderly persons chosen from different categories of households. These special enquiries were conducted not only to get clarifications on the doubts raised earlier while processing the data but also to collect required information on the dynamic aspects of agricultural development in particular, and the village economy in general. These interviews helped us immensely in re-constructing the agro-economic development of the village over a period of time. However, some more relevant methodological details are provided at appropriate places in the text. (For more details see Appendix - I).

The chapters of this study are based on different sets of data collected by us. The chapters on a) demographic, social and occupational structure of the village, b) land and livestock ownership and tenancy, c) non-agrarian economy

of the village and d) utilisation of common and public property resources are based on the census data. The chapters on a) agricultural transformation and b) poverty and income distribution, are mainly based on the sample data.

Chapter II

Demographic, Social and Occupational Structure of the Village

1. Population

As has already been said in the introduction to the study it is not possible to have any strict comparisons of our data on demography relating to the year 1985-86 with that of the data provided by the census publications relating to the years 1961, 1971 and 1981. Since we stayed in the village for over six months and conducted our census surveys on demography and other aspects twice, it is not at all possible for us to accept the 1981 census data relating to the population and workforce. And we are also aware of the fact that there are changes in the definitions adopted for the classifications of workforce between 1971 and 1981. Hence, we tried to collect our data and classify the persons into different categories of workers based on the 1971 census definitions of workforce. This is mainly done to relate our data for the mid-eighties at least with that of the earlier census data available for the year 1971. Even then, we are doubtful of any strict comparisons of our data; nevertheless such comparisons could provide some indications regarding the directional change of the village economy over a period of time.

Enathimelpakkam is only a small revenue village with hardly 106 households (H.Hs hereafter) and 486 persons in it during 1985-86. The village had a high proportion of scheduled castes population compared to the non-scheduled

castes population. And there has never been any scheduled tribe H.Hs or persons in the village. Now let us see how far the demographic situation of the village compares with its immediate taluk situation at least in the years 1971 and 1981.

Table: 1: Demographic change in the village and taluk between 1961 and 1986

	1961	1971	1981	1986
I/ Enathimelpakkam Village:				
1) Total number of Households	91	93	115	106
2) Total Population	374	383	492	486
a) Males	190	188	257	253
b) Females	184	195	235	233
3) Total number of S.C. H.Hs	-	-	-	57
4) Total S.C. Population	144	153	203	223
a) Males	73	75	105	101
b) Females	71	78	98	122
5) Scheduled Tribe Population	-	-	-	-
6) Proportion of SC Population to the total	38.50	39.95	41.26	45.88
II/Gummidipundi taluk				
1) Total no. of H.Hs	-	21,398	25,814	-
2) Total population	-	1,03,232	1,22,613	-
a) Males	-	53,219	62,263	-
b) Females	-	50,013	60,350	-
3) Total S.C. Population	-	24,936	30,819	-
a) Males		12,854	15,614	-
b) Females	-	12,082	15,205	
4) Proportion of SC oppulation to the total population	-	24.15	25.14	

	1961	1971	1981	1986
5) Total ST Population	-	2,251	2,978	-
a) Males	-	1,189	1,525	-
b) Females	-	1,062	1,453	-
6) Proportion of ST population to the total Population	-	2.18	2.43	-

Sources: 1) Census of India, 1961, 1971, 1981
2) Our census data for the year 1986

Since the Gummidipundi taluk was bifurcated in 1970 from its original taluk of Ponneri, we could not have any taluk level data available for the year 1961. However, compared to the taluk, the village shows a very high proportion of scheduled castes population to total population in all census years. The taluk had only about one-fourth of its total population belonging to the scheduled castes either in 1971 or in 1981. And the scheduled tribe population accounted for only a negligible proportion to the total population in the taluk. As far as the demographic change in the village was concerned we are highly sceptical of the data provided by the census publications for all the 3 years of 1961, 1971 and 1981. And the figures provided for the year 1981 by the census of India were higher than even the figures collected by us relating to the later year of 1986. If 1981 census figures were correct, then that indicates a net out-migration of population between 1981 and 1986.

During our census surveys we had thoroughly checked this point with the very knowledgeable people in the village. And, we found that there was in fact a net in-migration of 5 H.Hs into the village in the last 5 years. However, because of the non comparability of data on population between different census years, it is not possible to work out any rates of growth of population in the village which could have been profitably compared with the rates of growth of population obtained between different census years at the district and state levels of Tamil Nadu. But the table 1 may still indicate the slow rate of growth of population in the village compared to its taluk and district.

Now let us see the caste composition of H.Hs and Population in the village during 1985-86. As table 2 shows there were 10 caste groups of H.Hs in the village.

Table 2: Caste composition of population in the village in the year 1985-86

Caste group	No.of H.Hs	Population			A.V. family size	No.of earners	No.of dependents	Earner dependent ratio
		Males	Females	Total				
1. Mudaliars	22	75	44	119	5.41	78	41	1.90
2. Chettiars	16	55	43	98	6.12	68	30	2.26
3. Pillai	2	6	5	11	5.50	5	6	0.83
4. Devar	1	3	2	5	5.00	4	1	4.00
5. Naidu	1	1	2	3	3.00	3	0	0.00
6. Gownder	2	-	2	2	1.00	1	1	1.00
7. Brahmin	1	1	3	4	4.00	2	2	1.00
8. Achari	3	10	8	18	6.00	10	8	1.25
9. Barber	1	1	2	3	3.00	2	1	2.00
10. Scheduled castes	57	101	122	223	3.91	116	107	1.08
Total	106	253	233	486	4.58	289	197	1.46

Source: Field enquiries

Out of these 10 caste groups, the 3 castes of Mudaliars, Chettiars and Scheduled castes had emerged as the major castes accounting for 90 percent of the total H.Hs and population in the village. The all other 7 caste groups accounted only for 10 percent.

Table 3 shows the occupation-wise distribution of population in the village in the year 1985-86. Among the 8 occupational groups of H.Hs the agricultural labour group

Table 3: Occupation-wise distribution of population in the village in the year 1985-86

Occupational group	No.of H.Hs	Population	A.V. family size	% of population in the total
1. Big farmers	7	67	9.57	13.79
2. Medium farmers	4	28	7.00	5.76
3. Small farmers	6	42	7.00	8.64
4. Marginal farmers	14	69	4.93	14.20
5. Tenants	18	74	4.11	15.23
6. Agricultural labourers	36	129	3.58	26.54
7. Non-agricultural labourers	18	49	2.72	10.00
8. Artisanal & Service H.Hs	3	28	9.33	5.76
Total	106	486	4.58	100.00

Source: Our census surveys

had the largest number of H.Hs and population in the village.

This group accounted for more than one-fourth of the total Population of the village. In terms of number of H.Hs and Population the agricultural labour group was followed by the groups of tenants and marginal farmers. The table also showed that in case of big farmers the number of H.Hs and population were somewhat disproportionate compared to any other group in the village.

Having analysed the caste-wise and occupation-wise distribution of population in the village let us see the age group-wise distribution of that total population in the village for the same year. Table 4 shows that a higher

Table 4: Age-group-wise distribution of total population in the village in the year 1985-86

Occupational category	age-group (in years)					Total Population in each age group
	0-5	6-14	15-39	40-59	60 and above	
1. Big farmers	7	16	28	9	7	67
2. Medium farmers	3	3	14	6	2	28
3. Small farmers	3	8	21	7	3	42
4. Marginal farmers	9	14	31	11	4	69
5. Tenants	10	12	31	18	3	74
6. Agricultural labourers	23	22	60	24	-	129
7. Non-agricultural labourers	1	13	18	8	9	49
8. Artisanal and service H.Hs	3	9	13	3	-	28
9. Total	59	97	216	86	28	486
10. Percentage share in the total population	12.14	19.96	44.44	17.70	5.76	100.00

Source: field enquiry

proportion of population in the village belonged to the age-group of 15 to 39 years in 1985-86. This age-group alone accounted for little less than half of the total population of the village. If we re-group the data given in table 4 into those of a) children-aged below 14 years and (b) adults-aged in between 15 and 59 years then we can see the former accounting for 32.10 per cent of the total population with the latter accounting for 62.14 per cent. Thus while children accounted for little less than one-third of the total population, the adults accounted for little less than two-thirds of the total population in the village. And the old people accounted for only about 6 per cent of the total population in the village. However, it is interesting to note that a very high proportion of 62.14 per cent of the total population in the village belonged to the earning age-groups rather than to the dependent age-groups. The category-wise distribution of population belonging to different age-groups shows that there were no old people aged 60 and above in agricultural labour and artisanal and service H.H groups in the village. This may very well indicate the lower life expectancies prevailing in these hard working occupational groups of H.Hs in the village.

Family size

We are using the two terms H.Hs and families interchangeably throughout our analysis. Table 2 shows that among 10 caste groups of H.Hs, it was only the Chettiars and Acharis who maintained larger families in the village. The family sizes of Pillais Devars and Mudaliars were higher than the village average of 4.58. Among the major castes in the village, it was only the scheduled castes H.Hs who maintained lower family sizes even in comparison with the

the average family size of 4.58 obtained for the village as a whole.

Table 3 shows that among the 8 occupational groups of H.Hs, it was the big farmers who maintained the largest families followed by artisanal and service H.Hs, medium and small farmers in the village. Of all the occupational groups of H.Hs, it was only the non-agricultural labour group which had the lowest family size in the village. The occupational groups of tenants and agricultural labourers who accounted for half of the total H.Hs in the village maintained lower than village average family size.

Earners and dependents

Table 2 shows that of all caste groups of H.Hs, it was the Scheduled Castes who had the largest number of earners in the village followed by Mudaliar and Chettiars. But the number of dependents also followed the same order. Anyhow, the earner-dependent ratios worked out for different caste-groups give a different picture. Of the 3 major caste groups of Mudaliars, Chettiars and Scheduled Castes, while the former 2 groups showed ver high earner-dependent ratios the latter showed a very low earner-dependent ratio. The earner-dependent ratio of the Scheduled Castes was lower than even the earner - dependent ratio obtained for the whole village. Thus, among the Scheduled Castes from whom most of the agricultural labourers and tenants were drawn, the earners and dependents equal, making, the ratio almost 1:1.

Sex ratios (Number of females per thousand males)

With the help of the data collected from the census publications of India relating to the years 1961,1971 and 1981 and field enquiries relating to 1985-86 we have worked

out the sex-ratios both for the village and the taluk. Again, these sex-ratios have been worked out separately for a) the total population; b) scheduled Castes Population, and c) Non-Scheduled Castes Population both at the village and taluk levels. This has been done to see whether the sex-ratios differed very widely in between different caste-groups of population. Table 5 shows that while for the years of 1961, 1971 and 1981, the sex-ratios compared

Table 5: Sex-ratios among different groups of Population in the Village and Taluk

Category of Population	Village				Taluk	
	1961	1971	1981	1986	1971	1981
1. Total Population	968.42	1037.23	914.39	920.95	939.76	969.27
2. Scheduled Caste Population	972.60	1040.00	933.33	1207.92	939.94	973.80
3. Non-scheduled caste population	965.81	1035.00	901.31	730.26	939.70	967.76

Sources: 1) census of India, 1961, 1971 and 1981 and
2) the data for 1986 were gathered through the census surveys

favourably between different groups of populations both at the village and taluk levels; The sex-ratios of diffsrent groups of Village populations relating to our survey year of 1986 are causing some concern. While the sex-ratios for all other earlier 3 years moved only between 900 and 1100, for the village in 1986, they moved in between 730 to 1200 which is quite surprising. While for the whole village population, the

sex-ratio worked out to 920 for the Scheduled Castes Population it was around 1208 and for the non-scheduled castes it was around 730. Hence, the variation in the sex-ratios in between the scheduled and non-scheduled castes populations was very large. Thus, while the scheduled castes H.Hs had a very favourable sex-ratio; the caste H.Hs in the village had a very unfavourable sex-ratio in the year 1986. Of course, these were not quite unrelated to the fact that while the numbers of males among the upper castes of Mudaliars and Chettiars were far higher than the numbers of females, the number of females among the Scheduled Castes was far higher than the number of males in them.

2. Literacy

In the total population of 486, 259 were literates in the village in the year 1986. This worked out to a ratio of about 53.29per cent of the total population. Table 6 shows an appreciable increase in the literacy level of the village both in absolute and proportionate terms especially between 1971 and 1981. From the same table it is also interesting to note that while at the taluk level little less than one-third of its total population was literate at the village level about half of its total population was literate in the year 1981. Again, while at the taluk level, between 1971 and 1981, the female literacy had shown only a marginal improvement at the village level it had more than doubled during the same period. Male literacy in the village was also much higher compared to the similiar figures obtained at the taluk level. Again, while there was a wide variation in between the male and female literacy levels at the taluk level, it had been considerably narrowed down at the village level by the year 1981. But within the village

Table 6: Changes in Literacy levels in the Village and Taluk ver the years

Category of population	Village			Taluk		
	1961	1971	1981	1986	1971	1981
1. Total Population	374	383	492	486	1,03,232	1,22,613
a) Males	190	188	257	253	53,219	62,263
b) Females	184	195	235	233	50,013	60,350
2. Total no.of literates	132	133	244	259	28,298	39,032
a) Males	98	99	152	162	20,776	27,193
b) Females	34	34	92	97	7,522	11,839
3. Percentage of total literates to total population	35.29	34.72	49.59	53.29	27.41	31.83
4. Percentage of male literates to total males	51.58	52.66	59.14	64.03	39.03	43.67
5. Percentage of female literates to total females	18.48	17.43	39.15	41.63	15.04	19.62
6. No. of S.C. literates	-	-	-	69	-	-
7. Percentage of SC literates to SC total population	-	-	-	30.94	-	-
8. No. of literates belonging to the non-SC castes	-	-	-	190	-	-
9. Percentage of literates to the total non SC population	-	-	-	72.24	-	-

Source: 1) census of India, 1961, 1971 and 1981
2) Our census survey data for the year 1986

the variation in between the Scheduled Castes and non-Scheduled Castes literacy rates was very large. While little less than one-third of the total Scheduled Castes Population was literate about three-fourths of the total population belonging to the non-Scheduled Castes Population were literate.

The caste-wise distribution of total literacy in the village in table 7 relating to the year 1986 shows that while about one-fourth of the total literates

Table 7: Caste-wise distribution of literacy in the village in the year 1986

Caste-group	No. of H.Hs	No. of literates	Percentage of literates to the total	No. of literates per H.H
1. Mudaliars	22	89	34.36	4.04
2. Chettiars	16	71	27.41	4.44
3. Pillai	2	6	2.32	3.00
4. Devar	1	4	1.54	4.00
5. Naidu	1	1	0.39	1.00
6. Gownder	2	-	-	-
7. Brahmin	1	3	1.16	3.00
8. Achari	3	14	5.41	4.67
9. Barbers	1	2	0.77	2.00
10. Scheduled castes	57	69	26.64	1.21
Total	106	259	100.00	2.44

Source: Field survey data of 1986

belonged to the scheduled Castes about three-fourths of the total literates belonged to the non-Scheduled Castes in the Village. Even among the 9 non-scheduled castes, the two major castes of Mudaliars and Chettiars in accordance with their respective populations accounted for about 61 per cent of the total literates. If we take all the 3 major castes of the village while Mudaliars and Chettiars had more than 4 literates per H.H the Scheduled Castes had only 1.21 literates per H.H which was even lower than the village average of 2.44 per H.H.

Table 8 provides information on the occupation-wise distribution of total literacy in the village relating to the

Table 8: Occupation-wise distribution of total literacy in the village in the year 1986

Occupational group	No.of H.Hs	No.of literates	percentage of literates to the total	No. of literates per H.H
1. Big farmers	7	48	18.53	6.86
2. Medium farmers	4	15	5.79	3.75
3. Small farmers	6	31	11.97	5.17
4. Marginal farmers	14	46	17.76	3.28
5. Tenants	18	22	8.49	1.22
6. Agricultural labourers	36	49	18.92	1.36
7. Non-agricultural labourers	18	29	11.20	1.60
8. Artisanal and service H.Hs	3	19	7.34	6.33
Total	106	259	100.00	2.44

Source: Field Survey data of 1986

same year of 1986. The table shows that the group of agricultural labourers had the largest proportion of total literates followed by the cultivator groups of big farmers and marginal farmers. But the data on the average number of literates per H.H gives a different picture. The big farmers and the artisanal and service H.Hs had the largest number of literates per H.H at about 6, followed by the small farmers group in the village. The occupational groups of tenants, agricultural labourers and non-agricultural labourers had lower than even the village average number of literates per H.H.

Now let us see the different levels of education attained by different occupational groups of households by the year 1986.

Table 9: Different levels of education attained by different categories of households in the village in 1986

Occupational category	only to read & write	Between 1 & 5th standard	Between 6th & 8th standard	Between 9th & SSLC	Between the pre-university & degree	above the degree level	Total
1. Big farmers	8	10	10	16	3	1	48
2. Medium farmers	1	6	3	3	2	-	15
3. Small farmers	2	7	11	8	3	-	31
4. Marginal farmers	8	13	16	6	3	-	46
5. Tenants	5	6	8	3	-	-	22
6. Agricultural labourers	9	21	15	4	-	-	49

1	2	3	4	5	6	7	8
7. Non-agricul tural labourers	6	5	11	7	-	-	29
8. Artisanal and service house holds	3	9	5	2	-	-	19
9. Percentage to total literates	16.22	29.73	30.50	18.92	4.25	0.38	100.00
10. Total liter-ares	42	77	79	49	11	1	259

Source: Field survey data of 1986

In the total number of 259 literates about one-sixth of them know only to read and write and they never received any formal education. In the rest of those literates who had obtained some formal education, about 30 per cent had high school education. The village had very negligible proportion of total literates who obtained college education. In this connection it is encouraging to note that one of the bigger farmers of the village is a post-graduate in history.

Workforce.

Although there were changes in the definitions adopted between the 1961, 1971 and 1981 censuses for the classification of workers into 9 occupational categories we are still interested in making some comparisons with the data collected on the same by us relating to the later year of 1986. This is done based on the belief that despite strict non-comparability of data, they could

still indicate the trends of change between 1961 and 1986. On our part, we had largely made use of the definitions of 1971 census which used the criterion of "major source of income" for classifying the workers in to 9 occupational categories. But in table 10 below we have grouped all those workers belonging to 7 categories other than cultivators and agricultural labourers into the group of non-agricultural labourers. This has also been done for the sake of comparability with the 1981 census data on workforce which re-grouped the above said 7 categories into 2 groups. Further, we tried to compare the village level data on workforce with that of the similar data

Table : 10 Changes in the composition of Workforce in the village and the taluk between 1961 and 1986

Category of Workers	Village				Taluk	
	1961	1971	1981	1986	1971	1981
1. Total population	374	383	492	486	1,03,232	1,22,613
2. Total workers	191	141	222	204	37,733	47,127
3. Total cultivators:	134	45	66	86	14,322	17,138
a) Males	93	40	61	83	13,047	14,613
b) Females	41	5	5	3	1,275	2,525
4. Total agricultural labcurers labourers	40	75	122	86	14,242	18,023
a) Males	16	38	63	42	10,045	10,571
b) Females	24	37	59	44	4,197	7,452
5. Total non-agricultural labourers	17	21	34	32	9,169	11,966
6. Percentage of total workers to total population	51.07	36.81	45.12	41.97	36.55	38.43
7. Percentage of non-agricultural labourers to total workers	8.90	14.89	15.31	15.68	24.30	25.39
8. Percentage of cultivators to total workers	70.16	31.91	29.73	42.16	37.96	36.36
9. Percentage of agricultural labourers to total workers	20.94	53.19	54.95	42.16	37.74	38.24
10. Total number of non workers	183	242	270	282	65,499	75,486
11. Percentage of non workers in the total population	48.93	63.18	54.88	58.03	63.45	61.56
12. Percentage of agricultural workforce to total workforce	91.10	85.10	84.68	84.32	75.70	74.60

Sources: 1) Census of India, 1961,1971 and 1981 2) Field survey data of 1986.

available at the taluk level for the years of 1971 and 1981.

Table 10 shows that in 1986 out of a total population of 486 in the village 204 were workers and 282 were non-workers. These come to about 42 per cent of workers and about 58 per cent of non-workers in the total population of the village. Again, in the total workforce while agricultural workforce accounted for about 85 per cent, the non-agricultural workforce accounted for the rest of about 15 per cent.

The table also shows that the data relating to the year 1961 on the numbers of cultivators and agricultural labourers were somewhat unusual compared to the data available for the later years. The 1961 census data juxtaposed with the field data collected by us regarding the organisation of agriculture in 1960s indicated the large scale prevalence of subsistence farming based on owned-labour rather than on the hired-labour in the village. Even with some degree of unreliability of data, the 1961 census could still capture this aspect of the village economy prevailing then. However, with the modernisation of agriculture by 1971 and with its spread by 1981 there was a reduction in the number of cultivators associated with a simultaneous increase in the number of agricultural labourers in the village. But the full scale mechanisation of agriculture by the early 1980s had altered the situation and reduced the number of agricultural labourers associated with a simultaneous increase in the number of cultivators in the village. Hence, the increased degree of mechanisation in agriculture could only enable the increase in the number of cultivators but not the number of agricultural labourers. The sharp reduction in the number of agricultural labourers in the village over the years also indicated the possibility of some of them chaning their occupations altogether especially in favour of cultivation.

Compared to the taluk situation, both in 1971 and 1981, the village had lower proportions of cultivators and higher proportions of agricultural labourers in its total workforce. But the data relating to the year 1981 indicated the equalisation process at work between the numbers of cultivators and agricultural labourers in the village. And this process appeared to have already worked at the taluk level. Again, though the proportion of total workers engaged in non-agricultural occupations in the village had considerably gone up over the years it was still very low compared to the taluk where about one-fourth of its total workers were engaged in non-agricultural occupations either in 1971 or in 1981. However, it is worth nothing the fact that at the village level even in between 1971 and 1986 about 85 per cent of the total workforce continued to engage in agricultural occupations. And this was somewhat higher compared to the taluk position where only three-fourths of its total workforce were engaged in agricultural occupations in any given earlier year. Thus, despite the increased number of persons engaged in non-agricultural occupations, the demographic pressure on land continued to be the same in the village even over a period of 15 years.

Changes in occupational structure

Through our census questionnaires we had asked each and every individual household head whether there were any changes in the occupational status of either the present members of the H.H or by the members of his/her parent's H.H during the last 15 years. From this type of a census survey we found that altogether about 18 H.H out of a total of 106 H.Hs in the village had changed their occupations during the last 15 years. Among the 18 H.Hs there were 10 H.Hs who belonged to the scheduled castes and whose members had changed their occupations mainly from agricultural labour to the cultivation. The change

of occupation by these H.H members came not only due to the higher degree of mechanisation in agriculture but also due to their increased accessibility to both leased-in and encroached lands. In changing their occupations they were also aided by the state with loans and subsidies to buy plough bullocks in the early 1980s. The change of occupation by those H.H members also explain the above observed phenomenon with respect to the changes in workforce especially in between 1981 and 1986.

Of the remaining 8 H.H who also changed their occupations mainly belonged to the upper castes in the village. Out of these H.Hs, 3 had changed their original occupation of paddy business in the village to the setting up of petty shops both within and outside the village. Three others who were basically the cultivator H.Hs in the village had acquired the new occupational skill of masonary and this has over the years became their major source of income. In the rest one who was originally a cultivator had leased out his lands and became a regular salaried employed person in the state government. And the other was basically a blacksmith by profession and now he no longer continues in that profession. He purchased some lands within the village mainly with the help of his past savings and became a big farmer owing about 12 acres of land and a pumpset.

However, most of the changes in the occupational structure of the village were brought about within its own agricultural sector rather than in between its agricultural and non-agricultural sectors. And this also explains why the demographic pressure on land in this village continued to be unchanged even over a period of 15 years.

CHAPTER III

Land and Livestock Ownership and Tenancy

1. Land ownership and distribution

Land being the basic economic asset of the H.Hs, its ownership and distribution and changes in them become very important for the analysis of the whole village economy and its development over a period of time. According to 1981 census, the village had a geographical area of 524.77 acres in which 402.33 acres were cultivated land. Of this total cultivated area, 379.71 acres were irrigated and 22.62 acres were unirrigated. This showed that the village had a very high proportion of irrigated land in cultivation. While the cultivable waste was only 19.86 acres, the area not available for cultivation was quite large with 102.58 acres. In the 402 acres of total cultivated land the residents owned only little less than half (196.50 acres) of the total land. The 3 temples in the village owned totally about 20 acres. The non-residents owned about 185 acres or about 45 percent of the total cultivated land in the village[2].

In 1985-86, there were 306 patta holders who resided both within and outside the village. Our collection of data from the village records and the discussions based on them with both the present and ex-officials of the village revealed that while 145 pattas were in the names of residents the rest of 165 pattas were in the names of non-residents. Among the non-resident owners of land in the village 10 H.Hs owned only less than 5 acres each. And no non-resident owned more than 10 acres of land. Keeping this background in mind about the ownerships of total land by the residents and non-residents let us examine the distribution of land among the former.

Out of a total number of 106 H.Hs in the village in 1985-86 only 55 were owing land. The rest of 51 H.Hs did not own any land in the village. 20 H.Hs who did not own any land in the village were operating some land each. Hence there were 75 H.Hs who were either owning or operating land. The other 31 H.Hs neither owned nor operated any land in the village. The completely landless H.Hs constituted about 30 per cent of the total H.Hs.

As far as the distributions of owned land among the resident H.Hs were concerned we are presenting the data both for 1970-71 and 1985-86. But here it is appropriate to state the methodology adopted for obtaining the land distributions for the above said years. For the year 1985-86 we first collected the information on the name-wise pattadars and the extent of lands earmarked against their respective names from the village Adangal. With the help of our demographic data relating to the same year we had identified the pattadars and their H.Hs in the village. In this process we were also helped by the village officials. Thus, we could classify the total extent of lands owned by different H.Hs in the village. And these data were finalised only after checking with the concerned H.Hs through our second census survey.

For obtaining the distribution of land owned among the resident H.Hs for the year 1970-71 we relied mainly on the 10-1--chitta of the village for 1986-87. In the 10-1-chitta for the purpose of working out the land tax amounts due from each H.H the village officials had noted the extent of land transacted between different H.Hs at particular years in the past. For example, if a particular H.H member had sold out a piece of land belonging to a particular patta number to some other H.H members in the village, then that

extent of land was deducted from the total land ownership of the seller from that particular year and the same was added to the buyers total land ownership account from that year. The making of these entries in the 10-1 chitta also became necessary for the Village Administrative Officer (V.A.O) who actually worked out the tax amounts payable by each H.H in the village in a particular year. In making these entries his job was also made easier because the sellers of land themselves informed the V.A.O. for reducing their tax amounts payable. Hence even if the sale of a particular piece of land was not registered it was also noted in this record for the purpose of tax calculations. However, with the help of the 10-1 chitta and the village officials we could identify the H.Hs and the extent lands transacted in between them during the last 15 years. Then, we also checked the data on land transactions directly with the concerned heads of the H.Hs and finalised the data. Afterwords, it became easier for us to work out the distribution of land owned among the resident H.Hs for the year 1970-71.

Table 11 provides information on the distributions of total land owned among the resident H.Hs in the years of 1970-71 and 1985-86 according to different size classes. The table shows

Table 11: Distribution of land ownership among the households of the village in 1970-71 and 1985-86

Size classes (in acres)	1970-71 No. of H.Hs	% of H.Hs	Cumulative % of H.Hs	Area owned (in acres)	% of area owned	Cumulative % of area owned	1985-86 No. of H.Hs	% of H.Hs	Cumulative % of H.Hs	Area owned (in acres)	% of area owned	Cumulative % of area owned
1. 0.01- 0.99	19	33.33	33.33	9.55	5.56	5.56	23	41.82	41.82	10.38	5.28	5.28
2. 1.00- 2.49	14	24.56	57.89	21.29	12.39	17.95	13	23.63	65.45	19.54	9.94	15.22
3. 2.50- 4.99	14	24.56	82.45	47.53	27.66	45.61	7	12.73	78.18	22.70	11.55	26.77
4. 5.00- 7.49	4	7.02	89.47	24.00	13.97	59.58	2	3.64	81.82	10.10	5.14	31.91
5. 7.50- 9.99	2	3.52	92.99	16.50	9.60	69.18	3	5.45	87.27	24.50	12.47	44.38
6. 10.00-14.99	3	5.26	98.25	33.93	19.76	88.94	55	9.09	96.36	58.96	30.01	74.39
7. 15.00- 19.99	1	1.75	100.00	19.00	11.06	100.00	-	-	-	-	-	-
8. 20.00- 24.99	-	-	-	-	-	-	1	1.82	98.18	20.32	10.34	84.73
9. 25.00-29.99	-	-	-	-	-	-	-	-	-	-	-	-
10. 30 and above	-	-	-	-	-	-	1	1.82	100.00	30.00	15.27	100.00
Total	57/93	100.00	-	171.80	100.00	-	55/106	100.00	-	196.50	100.00	-

Sources: 1) 10-1- Chitta of the village and the 2) Village Adangal for the Fasli year 1396.

that out of a total of 93 resident H.Hs in 1971 only 57 owned some land in the village. The rest 36 H.Hs or about 30 percent of the H.Hs then did not own any land. In contrast to that in 1985-86 out of a total of 106 H.Hs only 55 H.Hs owned some land and the rest 51 H.Hs or about 48 per cent of the H.Hs did not own any land. Thus there was a considerable increase in the number of land less H.Hs in the village over a period of time. Despite the increased number of landless H.Hs the total area owned by all the resident H.Hs had gone up from 171.80 acres in 1971-72 to 196.50 acres in 1985-86. This only indicated the increased concentration of land ownership in a few hands in the village over the years. The table also shows that compared to 1971-71 in 1985-86 the 4 lower size classes owning land up to 7.49 acres had experienced declines in their respective total areas owned before; the upper 6 size classes owning betweden 7.50 and 30 acres had increased their previous ownerships of land in the village. In this process while the 4 lower size classes had totally sold out 39.65 acres the upper 6 size classes had totally bought 64.35 acres. Since very oten the sales and purchases of lands in the village were routed through the non-residents at different points in time, we cannot expect any coincidence between the extents of lands sold and bought.[3] Further it is also worth noting the fact that while there were no holdings with more than 20 acres of land in 1970-71, 2 such holdings had emerged by 1985-86. However, the Gini coefficients of land concentration had revealed a significant increase from 0.5325 in 1970-71 to 0.6430 in 1985-86.[4]

In table 12 the distribution of operated area among the resident H.Hs in the year 1985-86 has been shown.

Table 12: Distribution of operated area among the resic nt households in 1985-86

Size Class	No.of H.Hs	% of H.Hs	Cumu-lative % of H.Hs	Area opera-ted (in acres)	% of area opera ted to the total	Cumulative % of area operated
1. 0.01-0.99	24	32.00	32.00	12.39	5.14	5.14
2. 1.00-2.49	30	40.00	72.00	45.26	18.79	23.93
3. 2.50-4.99	10	13.33	85.33	34.66	14.39	38.32
4. 5.00-7.49	3	4.00	89.33	17.10	7.10	45.42
5. 7.50-9.99	-	-	-	-	-	-
6. 10.00-14.99	5	6.67	96.00	59.33	24.63	70.05
7. 15.00-19.99	1	1.33	97.33	18.00	7.47	77.52
8. 20.00-24.99	1	1.33	98.66	22.82	9.47	86.99
9. 25.00-29.99	-	-	-	-	-	-
10. 30 and above	1	1.33	99.99	31.30	13.00	100.00
Total	75	100.00		240.86	100.00	

Sources: 1.The 10-1-Chitta and 2) the Adangal of the village for the Fasli 1396, year 1985-86.

comparing tables 11 and 12 on the distributions of owned and operated areas relating to the particular year of 1985-86, we found that while 55 H.Hs owned only 196.50 acres 75 H.Hs operated a total area of 240.86 acres in the village. But compared to the distribution of owned area, the lower size classes enjoyed a much better position with respect to their operational holdings. While the lower 4 size classes owned only 31.91 per cent of the total land, they operated about 45.42 per cent of the total operated area in the village. Here it is worrying to note the fact that the owned and operated areas of land of the lowest size class (below 1 acre) accounted for only about 5 per cent of the respective total areas in the village. And this class comprised of about one-fourth of the total H.Hs and nearly one-third of the land operating H.Hs in the village during 1985-86. Further, the tables also showed not much of a difference between the owned and operated area in the upper 6 land owning and operating size classes. However, the Gini coefficients worked out for obtaining the concentrations of owned and operated areas revealed considerable difference (while for the owned land it was 0.6430 for the operatedd area it was 0.6077) between them. Thus, the operated area was less concentrated than the owned area.

In table 13 information on the distributions of owned and operated areas among the different occupational categories of H.Hs in the village for 1985-86 has been provided.

Table 13: Occupational Category-wise distribution of Owned and operated areas in the village in 1985-86

Category of H.Hs	No. of H.Hs	% of H.Hs in the total	land owned (in acres)	% of land owned to the total	land operate (in acres)	% of land operated to the total
1. Big farmers	7	6.60	109.28	55.61	108.46	45.03
2. Medium farmers	4	3.77	29.60	15.06	35.60	14.78
3. Small farmers	6	5.66	22.70	11.55	23.20	9.63
4. Marginal farmers	14	13.21	18.21	9.27	21.46	8.91
5. Tenants	18	16.98	3.95	2.01	34.16	14.18
6. Agricultural labourers	36	33.96	4.62	2.35	8.87	3.68
7. Non-Agricultural labourers	18	16.98	7.72	3.93	7.66	3.18
8. Artisanal and service H.Hs	3	2.83	0.42	0.21	1.45	0.60
Total	106	100.00	196.50	100.00	240.86	100.00

Source: 1. The 10-1-Chitta; 2) the adangal of the village for the fasli 1396, year 1985-86 and 3) Field survey data of 1985-86.

Table 13 reveals the extreme concentration of land in the hands of a few big farmers in the village. The 7 big farmers who accounted for just 6.60 per cent of the total H.Hs in the village owned about 55.61 per cent of the total land. On the other hand, some of the major occupational groups such as tenants, agricultural labourers and non-agricultural labourers who accounted for 67.92 per cent of the total H.Hs owned only just 16.29 per cent of the total land owned by the residents of the village. Put it in otherwords, a little more than two-thirds of the total H.Hs in the village owned only a little more than one-sixth of the total land in the year 1985-86. However, ownership of more than one-half of the total land by just 7 H.Hs might have changed the direction of the economic progress of the whole village during the last 15 years which we shall also be analysing in the next few chapters.

As far as the distribution of operated area among the different occupational groups was concerned, it was not only less concentrated but also atleast worked in favour of one of the major poor groups of the H.Hs viz. the tenants. The other major occupational groups of H.Hs such as agricultural labourers and non-agricultural labourers could show only marginal improvements with respect to their total operated areas in the village.

Table 14 provides the information on the caste-wise distribution of both owned and operated lands in the village for the year 1985-86.

Table 14: Caste-wise distribution of both owned and operated lands in the village in 1985-86

	Caste group	No. of H.Hs	% of H.Hs to the total	land owned (in acres)	% of land owned to the total	land operated (in acres)	% of land operated to the total
1.	Mudaliars	22	20.75	128.28	65.28	135.26	56.16
2.	Chettiars	16	15.09	33.60	17.09	44.19	18.35
3.	Pillai	2	1.89	10.00	5.09	12.50	5.19
4.	Devar	1	0.94	1.75	0.89	0.95	0.39
5.	Naidu	1	0.94	-	-	-	-
6.	Gounder	2	1.89	0.62	0.32	0.92	0.38
7.	Brahmin	1	0.94	0.83	0.42	0.23	0.09
8.	Achari	3	2.83	13.05	6.64	6.08	2.52
9.	Barber	1	0.94	-	-	-	-
10.	Scheduled castes	57	53.77	8.37	4.26	40.73	16.91
	Total ...	106	100.00	196.50	100.00	240.86	100.00

Sources: Same as for table 13.

Both in terms of land ownership and land operation, Mudaliars had the commanding position in the village. They were followed by the Chettiars. All other 8 caste groups who accounted for about 64 per cent of the total H.Hs owned only 17.62 per cent of land and operated about 26 per cent of the total area in the village. Though the scheduled caste H.Hs who accounted for about 54 per cent of the total H.Hs owned only about 4 per cent of the land and operated 17 per cent of the total operated area in the village. Further, while the Mudaliar H.Hs could either own or operate on an average 6 to 7 acres per H.H the chettiars could either own or operate on an average only 2 to 3 acres per H.H in 1985-86. All other 8 caste groups of H.H on an average owned 0.50 acre and operated 0.90 acre of land.

Now let us come to the ownership of land by the residents in other villages and also their illegal occupations of land both within and outside the village. Of the total 106 H.Hs in the village, only 4 H.Hs owned about 14 acres of land in one of the neighbouring villages. In the 4, while 3 belonged to the big farmer's group, 1 belonged to the medium farmer's group. The 14 acres owned by them in other villages were all the lands bought during the last 10 years. And this was in addition to what they had already bought in their own resident village. None of them had any inherited lands located in the other villages previously. And these 14 acres were reported to have been bought at lower prices of Rs.3000 to Rs.5000 per acre.

As far as the encroached or illegal occupations of land were concerned the resident scheduled caste households (S.C.H.Hs) had a dominating position in the village. Since the extent of poromboke or common lands available in their own village was negligible most of them had encroache d lands in the

tank foreshore of the neighbouring village. And this was made possible not only because of the easy accessibility of these H.Hs to that tank foreshore, but also the encroached lands could be cultivated with the help of their own tank waters. Hence around 20 S.C. H.H.S had encroached about 60 acres of land about 10 years back and started cultivating. But during the last 5 years, around 10 S.C. H.Hs had also sold out their encroached lands at very low prices mostly to the non-residents in order to finance their unproductive activities. By 1985 - 86 only 10 S.C. H.Hs were in illegal occupation of about 30 acres of land in the neighbouring tank foreshore. From within the upper caste H.Hs one ex-Karnam had encroached about 6 acres of land in the neighbouring tank foreshore. But over the years, he was able to obtain patta for this encroached lands mainly by using his influence as a village official with the concerned authorities of the revenue department.

2. Livestock ownership and distribution

One of the important aspects of the livestock economy of the village was the sharp reduction in the draught animal labour power which was associated with the increased activities of dairying and sheep rearing in the village. The data on the total livestock ownership of the village relating to one of the past years viz. 1976-77 were collected from the livestock census Register maintained by the taluk statisfical officer. The data relating to the year 1985-86 were collected by us through our household census surveys. Whereas our census data enabled us to work out the distributions of ownership of livestock and agricultural implements among different occupational and caste groups of H.Hs, no such distributions could be worked out with the data provided by the official agencies relating to the year 1976-77. However the comparisons of even the total ownership of livestock and agricultural implements between 1976-77

and 1985-86 enabled us to obtain some important indicators of change in the livestock economy of the village over a period of time.

Table 15 provides information on the total ownerships of different types of adult animals for 1976-77 and 1985-86. According to table 15, there was a total decline of about 105.

Table 15: Changes in the distribution of different types of animals in the village between 1976-77 and 1985-86.

Type of animals	1976-77	1985-86	Absolute change over the years	% change over the years.
1. No. of Bullocks	221	89	-132	-59.73
2. No. of milch animals	35	86	+ 51	+145.71
3. No. of he-buffaloes	23	5	-18	-78.26
4. No. of young animals (below 3 yrs)	86	53	-33	-38.37
5. No. of sheep and goats	Nil	27	+27	
Total	365	260	-105	-28.77

Source: 1. For the year 1976-77 data were collected from the Livestock census Register provided by the Taluk Statistical Officer, Gummidipundi;

2. For the year 1985-86 field data were through census surveys.

animals or about 29 per cent of the total animals even within a short period of a decade. As has already been said that there was a sharp decline of draught animal labour (bullocks and he-buffaloes) power in a period which withnessed the rapid mechanisation of agriculture in the village[5]. The number of bullocks in 1985-86 could have been only 40 if government had not distributed about 25 pairs of bullocks under its Integrated Rural Development Programme (I.R.D.P.) in 1981-1982. And this only shows how far tractorisation of certain agricultural operations such as ploughing, transportation and threshing had displaced the use of draught animal labour power in agriculture over the years. However, it is encouraging to note that some of the income generating type of animals such as cows, she-buffaloes and sheep and goats had been increasingly owned and maintained by the H.Hs in the village over the years.

Table 16 provides information on the occupational category-wise distribution of different types of animals for the year 1985-86. The table shows an extreme concentration of high value adult animals in the village in a few hands of 7 big farmers. while the 7 big farmers who accounted for just about 6 per cent of the total H.Hs in the village owned about one-third of the total animals the rest of 99 H.Hs wo accounted for 96 per cent of the total H.Hs owned only two-thirds (about 66 per cent) of the total animals. The agricultural labour H.Hs who numbered about 36 or who constituted about one-third of the total H.Hs in the village owned only about 8 per cent of the total animals. The tenants who numbered 18 H.Hs or constituted about one-sixth of the total H.Hs could own about one-fourth of the total animals in the village. Of the different,

Table 16: Occupational category-wise distribution of different types of animals owned in the village in 1985-86

Category of house-holds.	Type of animals					Total No. of ani-mals owned	% of the total
	No. of bullo-cks.	No. of milch ani-mals.	No. of he-buffa-loes	No. of sheep & goat	No. of young ani-mals (below 3 yrs).		
1. Big farmers	18	31	3	2	31	85	32.69
2. Medium farmers	14	16	-	-	-	30	11.54
3. Small farmers	6	10	-	-	7	23	8.85
4. Marginal farmers	10	11	1	3	3	28	10.77
5. Tenants	32	9	1	14	6	62	23.85
6. Agricultural labourers	9	2	-	8	2	21	8.08
7. Non-Agricultural labourers	-	4	-	-	3	7	2.69
8. Artisanal & service H.Hs	-	3	-	-	1	4	1.54
9. Total	89	86	5	27	53	260	100.00
10. As % to the total	34.23	33.07	1.92	10.38	20.38	100.00	-

Source : Survey data for 1985-86.

types of animals owned by different categories of households, while the tenants owned the largest numbers of bullocks and sheep and goats - the big farmers owned the largest numbers of milch animals and young animals in the village. It is also encouraging to note that out of a total number of 260 adult animals owned the high value bullocks and milch animals accounted for about one-third of the total animals each in the village.

Through our census surveys, we had also collected information on the Poultry activities of the H.Hs. There were about 217 hens owned by different H.Hs in which the agricultural labourer H.Hs owned the largest number of 109 hen in the village. And all other 7 categories of H.Hs owned the remaining half of the total hens. However, it is discouraging to note that the agricultural labour H.Hs own only the large number of low value (a hen in the village costs only about Rs.25) birds rather than the high value (a bullock or a milch animal in the village costs from Rs.1000 to 1500) animals.

Table 17 provides information on the caste-wise distribution of different types of animals owned in the village during 1985-86. According to the table, the upper caste Mudaliar H.Hs were owning the largest proportion of animals followed by scheduled caste and Chettiar H.Hs. While the scheduled caste H.Hs owned the largest numbers of bullocks and sheep and goats the Mudaliar H.Hs owned the largest numbers of milch animals and young animals in the village. Further, while Mudaliars owned on an average about 5 animals per H.H, Chettiars owned 2 to 3 animals per H.H and the scheduled castes owned just 1 to 2 animals per H.H. The minority caste group of Acharis owned on an average more than 6 animals per H.H.

Table 17: Caste-wise distribution of different types of animals owned in the village in 1985-86

Caste-group	No.of H.Hs.	Type of animals owned: No.of bullocks.	No.of Milch animals	No.of he-buffaloes	No.of sheep and goats	No.of young animals (below 3 Yrs)	Total No.of animals owned	As % to the total
1.Mudaliars	22	25	52	3	4	22	106	40.77
2.Chettiars	16	18	10	1	4	11	44	16.92
3.Pillai	2	2	6	-	-	-	8	3.07
4.Devar	1	-	-	-	-	2	2	0.77
5.Naidu	1	-	-	-	-	-	-	-
6.Gowander	2	-	2	-	-	-	2	0.77
7.Brahmin	1	-	-	-	-	-	-	-
8.Achari	3	4	6	-	-	9	19	7.31
9.Barbar	1	-	-	-	-	-	-	--
10.Scheduled castes	57	40	10	1	19	9	79	30.38
Total	106	89	86	5	27	53	260	100.00

Source: Our survey data for 1985-86.

Our field enquiries revealed that small and marginal framers and agricultural labourers might have experienced the large declines in their respective total ownerships of animals compared to the other categories of farmers in the village. Some 10 agricultural labour H.Hs had also sold 20 bullocks which were provided under the I.R.D.P. only in 1981.

However, the reduced employment of bullocks consequent to the tractorisation of agriculture and the increased prices and costs of maintenance of animals over the years were said to be the main factors behind the reduced ownership of live-stock in the village.

3. Ownership and distribution of agricultural implements

For drawing comparisons with the previous year on the total ownership of agricultural implements, we again had to depend on the data provided by the Livestock census Register relating to the year 1976-77. But this register had provided just 3 figures on the total ownership of both traditional and modern agricultural implements which are not adequate for drawing any meaningful comparisons between 1976-77 and 1985-86. Still, we used the available data to see whether there were any major indications of change even in between the two periods.

Table 18 shows the changes in the total ownership of different agricultural implements between 1976-77 and 1985-86. But we need to be cautious in interpreting the data relating to the year 1976-77. It is not even possible to think that there were not many types of agricultural implements owned by the H.Hs in the mid -seventies by which time the village came to have a fully modernised agriculture. On the mechanisation of agriculture in the village the Livestock census Register had no information at all. But this is contrary to what

Table: 18 Changes in the total ownership of different agricultural implements between 1976-77 and 1985-86

Type of agricultural implements	1976-77	1985-86	absolute change over the years.
1. Traditional implements			
1. Wooden ploughs	84	47	-37
2. Bullock carts	19	18	- 1
3. Levelling Boards	-	22	+22
4. Knives & Sickles	-	289	+289
5. Any other traditional implements	-	140	+140
Sub - Total	103	516	
II. Modern implements.			
1. Iron or disc ploughs	5	51	+46
2. Land pudlers	-	7	+ 7
3. Sprayers & dusters	-	2	+ 2
4. Pumpsets	-	21	+21
5. Tractors	-	6	+ 6
Sub - Total	5	87	
Grand total	108	603	495

Sources: 1. for the year 1976-77, the data were collected from Live Stock Cenus Register 1976-77. and

2. Our survey data for the year 1985-86.

had actually been owned by the H.Hs even in mid-seventies. Our field enquiries revealed that even by 1976-77 there were about 15 electric pumpsets, 1 diesel engine and 3 tractors operating in the village. However, the table indicates the possibility of declining ownership of wooden implements associated with the increasing ownership of iron implements over the years. In 1985-86 there were about 516 traditional implements and 87 modern implements owned by the H.Hs in the village. And out of a total 603 implements owned about 45 were very high value (such as bullock carts, pumpsets and tractors) implements and the rest 558 were low value implements. But over the years, there has been a significant change in the use of different types of implements in the village. And one such major change related to the replacement of wooden implements with the iron implements in agriculture. This kind of changes brought about in the use of different types of implements had their own implications to the employment and earnings of artisanal H.Hs such as blacksmiths and carpenters in the village.

Now let us see the distributions of different types of implements among different occupational and caste groups of H.Hs of the village for which we had collected fairly reliable data, through our census surveys.

Table 19 reveals that the 7 big farmers in the village owned a little less than one-fourth of the total traditional implements and a little less than half of the total modern implements. They were followed by the tenants and marginal farmers in the village. The

Table 19: Occupational category-wise distribution of traditional and modern implements in the village in 1985-86

Type of agricultural implements	CATEGORY OF HOUSEHOLDS Big farmers	Medium farmers	Small farmers	Marginal farmers	Tenants	Agricultural labourers	Non-agricultural labourers	Artisanal and service H.Hs	Total
I. Traditional									
1. Wooden ploughs	10	3	3	9	16	6	-	-	47
2. Bullock carts	5	2	2	2	7	-	-	-	18
3. Levelling boards	7	2	2	5	6	-	-	-	22
4. Knives & Sickles	74	15	18	48	73	43	8	10	239
5. Other traditional implements	25	6	9	24	37	26	5	8	140
6. Sub-total	121	28	34	88	139	75	13	18	516
7. As % to the total	23.45	5.43	6.59	17.05	26.94	14.53	2.52	3.49	100.00
II. Modern									
1. Iron Ploughs	13	3	4	8	16	7	-	-	51
2. Land pudlers	7	-	-	-	-	-	-	-	7
3. Sprayars	2	-	-	-	-	-	-	-	2
4. Pumpsets	13	3	4	1	-	-	-	-	21
5. Tractors	5	1	-	-	-	-	-	-	6
6. Sub-total	40	7	8	9	16	7	-	-	87
7. As % to the total	45.98	8.05	9.19	10.34	18.39	8.04	-	-	100.00
8. Grand Total	161	35	42	97	155	82	13	18	603
9. As % to the total	26.70	5.80	6.96	16.08	25.71	13.60	2.16	2.99	100.00

big farmers and tenants put together owned more than half of the total traditional and modern agricultural implements. It is also surprising to note from the table that the medium farmers of the village owned only less than 6 per cent of the total traditional and modern agricultural implements. Although the tenants owned equal numbers of traditional and modern agricultural implements compared to the big farmers of the village in terms of the total value of implements owned, they were far below the latters' total value of implements. Table 19 shows that the 7 big farmers owned 5 out of the 18 bullock carts (each costs around Rs.8000) 13 out of 21 pumpsets (the installation of 1 pumpset in the village costed around Rs.30,000) and 5 out of 6 tractors (the price of a tractor in 1985-86 was around Rs.1,30,000) available in the village.

Table 20 shows the caste-wise distribution of only the above said high value agricultural implements in the village. Out of a total of 45 high value agricultural implements owned by different caste H.Hs in the village, the Mudaliars themselves owned 26. This group also owned the largest number of all the 3 types of high value implements in the village. As a big farmer in the village the single Achari H.H owned a bullock cart and a pumpset. The 57 scheduled castes H.Hs totally owned only 5 bullock carts. And even these bullock carts were provided to them by the government under its I.R.D.P. on loan cum subsidy basis. Otherwise, they could not be owning any major agricultural implements in the village.

Table 20: Caste-wise distribution of high-value agricultural implements owned in the village in 1985-86

Caste-group	No.of H.Hs	No. of implements owned			Total No.of imple-ments owned
		Bullock carts	Pumpsets	Tractors	
1. Mudaliars	22	8	13	5	26
2. Chettiars	16	3	5	1	9
3. Pillai	2	1	2	-	3
4. Devars	1	-	-	-	-
5. Naidu	1	-	-	-	-
6. Gownder	2	-	-	-	-
7. Brahmin	1	-	-	-	-
8. Achari	3	1	1	-	2
9. Barber	1	-	-	-	-
10. Scheduled castes	57	5	-	-	5
Total	106	18	21	6	45

Source: Our survey data for 1985-86.

4. Tenancy

During the recent years tenancy in the village was very much influenced by the non-resident ownership of land rather than by the resident ownership of land. In 1985-86, out of a total of 106 H.Hs in the village about 43 H.Hs had leased-in lands. In contrast to this only 12 resident H.Hs had leased-out their lands. While the total leased in area accounted for 69.79 acres, the leased-out land by the residents accounted for only 25.43 acres. Further, while only 1 female cultivator had leased - in lands from others 2 female cultivators had leased-out their lands to others in the village. Out of the total 69.79 acres of leased-in land about 9 acres belonged to the 2 temples in the village. These lands were leased - out by the service H.Hs to whom these 9 acres were given as manyams (gifts). Thus, actually 35.36 acres were leased-in from the non resident H.Hs. Even in this about 17 acres had been sub-let by the biggest farmer of the villag to about 10 scheduled caste H.Hs who were loyal to him. Of the total leased - out land of 25.43 acres by the residents most of it came from 2 females and 1 big farmer who could not cultivate their lands on their own mainly due to lack of men workers in their H.Hs.

Table 21 provides information on the leasing-in and leasing-out by different categories of H.Hs in the village in 1985-86. The table shows that the 18

Table 21: Leasing - in and Leasing - out according to different occupational categories of households in the village in 1985-86

Category of households	Total No. of H.Hs	Leasing in			Leasing out		
		No.of H.Hs	Area in (acres)	as % to the total	No.of H.Hs	Area in (acres)	as % to the total
1. Big farmers	7	4	9.18	13.15	3	10.00	39.32
2. Medium farmers	4	2	12.00	17.19	1	6.00	23.59
3. Small farmers	6	2	4.50	6.45	2	4.00	15.73
4. Marginal farmers	14	4	6.55	9.38	2	3.30	12.98
5. Tenants	18	18	30.81	44.15	1	0.60	2.36
6. Agricultural labourers	36	9	4.25	6.09	-	-	-
7. Non-agricultural labourers	18	2	1.17	1.68	2	1.23	4.84
8. Artisanal and service H.Hs	3	2	1.33	1.91	1	0.30	1.18
Total	106	43	69.79	100.00	12	25.43	100.00

Source: Our survey data for 1985-86.

tenants whose major source of income was only tenancy had leased-in- about 44 per cent of the total land leased-in. They were followed by the medium and big farmers in the village. While the pure tenants leased-in on an overage 1.71 acres per H.H the medium farmers had leased-in on an average 8.60 acres per H.H which was the largest compared to other categories of H.Hs leasing-in. The4 big farmers on

an average leased-in 3.29 acres per H.H. Thus, it was actually the owner cultivators who belonged to the medium and big farmers groups who leased-in the larger areas per H.H compared to the pure tenants. Further, our field enquiries had revealed that while the big and medium farmers had leased-in the best lands which were more fertile and easily accessible the tenants had leased-in the less fertile and the inaccessible lands in the village.

The rents charged per acre in the village varied from 6 to 8 bags of paddy per year. While the lands which were more fertile and nearer to the tank fetched a rent of 8 bags of paddy per acre per year the lands which were less fertile and located far away from the tank in the ayacut could fetch only 6 bags of paddy per acre per year. These rents were paid by the tenants only if they cultivated a minimum of 2 crops per year, otherwise they paid only half of the agreed rents. However most of the tenants cultivated 2 crops in a year.

Compared to the tenancy situation prevailing in 1985-86 the situation prevailing prior to 1970-71 was some what different. Our purposive sampling enquiry with the elderly people who were more knowledgeable about the tenancy situation prevailing then revealed that about 100 acres of land were leased-in by the residents around 1970-71. The residents and non-residents had leased out an equal proportion of the total land ie. about 50 acres by each group. Most of the tenants were drawn then mainly from the Chettiars and Mudaliars and only to a very limited extent from the scheduled castes. With in the village, it was said to be the Chettiars who used to lease-out larger areas in the village then. By 1985-86, the tenancy situation got almost altered into a situation in which

Chettiars no longer leased-in or leased-out in such higher proportions. One important change that had occured with regard to tenancy was the fall in the total area leased-in by about one-third.[6] But this fall in the total area leased-in had also been associated with evictions of some Chettiar tenants. Over the years the number of scheduled caste tenants in the village had substantially gone up. However, the reduction of leased-in land especially among the chettiar H.Hs had also coincided with some of their own caste landlords selling away their lands to both residents and non-residents who started cultivating their purchased lands on their own. The main reason offered for the increased number of scheduled caste tenants in the village was the increased labour requirements of modern agriculture which got the tenants tied up with the landlords. However, the rents charged per acre of paddy over the years had almost doubled from 3 to 4 bags in 1970-71 to 6 to 8 bags in 1985-86. And the lands continued to be leased-out only on Kuttagai (fixed rent) basis rather than on varam (fixed proportion of the produce) basis in the village.

Table 22 provides information on the caste-wise distribution of leased-in and leased-out lands in the village in 1985-86. The table shows that out of a total

Table 22: Leasing-in and leasing-out by different caste groups of households in the village in 1985-86

Caste Group	Total No.of H.Hs	Leasing-in			Leasing-out		
		No.of H.Hs	Extent (in acres)	as % to the total	No.of H.Hs	Extent (in acres)	as % to the to-tal
1. Mudaliars	22	7	15.58	22.32	4	8.60	33.82
2. Chettiars	16	5	17.72	25.39	4	7.13	28.04
3. Pillai	2	1	2.50	3.58	-	-	-
4. Devar	1	-	-	-	1	0.80	3.15
5. Naidu	1	-	-	-	-	-	-
6. Gownder	2	1	0.30	0.43	-	-	-
7. Brahmin	1	-	-	-	1	0.60	2.36
8. Achari	3	2	1.33	1.91	2	8.30	32.63
9. Barber	1	-	-	-	-	-	-
10. Scheduled Castes	57	27	32.36	46.37	-	-	-
Total	106	43	69.79	100.00	12	25.43	100.00

Source: Our survey data for 1985-86.

number of 43 H.Hs who had leased - in, 27 belonged to the scheduled castes and 16 belonged to the non scheduled castes in the village. While the scheduled caste tenants had leased-in about 46 per cent of the total land leased-in the non-scheduled castes had leased-in about 54 per cent. Thus, though the scheduled caste tenants were larger in number compared to the non-scheduled caste tenants the percentage of total area leased-in by them was much less. In terms of area leased-in per tenant H.H, while the scheduled castes tenants had leased - in on an

average 2.34 acres per H.H. And this only shows that a large number of scheduled caste tenants could have leased-in only the economically unviable lands in the village.

While the tenants in the village were not provided with any credit or inputs by their respective landlords they were expected to provide their labour services and market their produce only to their respective landlords. Of course, this kind of practices were very much restricted only to the scheduled caste tenants in the village. As far as the non-scheduled caste tenants were concerned they were not very much tied to their landlords in any labour product and credit markets in the village. It appears that the scheduled castes were provided with some land for cultivation mainly with the intension of availing their labour supply for some peak agricultural operations in the village. And, they were also paid lower than the going wage rates in the village by their land lords.

Chapter IV

Agricultural Transformation

1. Changes in agricultural production organisation between 1965-66 and 1985-86

Around the mid-sixties agriculture in the village was carried on mainly for subsistence, based on large scale use of family labour rather than hired labour. Paddy was its major crop. Cultivation was done mainly by broadcasting the traditional varieties of paddy. The techniques employed were age-old. Domestic manures were largely used in agriculture. Mulciple cropping was very much limited to the cultivation of ragi and chillies other than its major crop of paddy. However, intensity of cropping was much less. And the yield rates of paddy were varying at best from 14 to 18 bags (of 80 kgs each) per acre. The village tank was its sole irrigation source. There were no wells or pumpsets in the agricultural ayacut of the village then.

In the sixties, most of the cultivator H.Hs used to employ one permanent servant and one cowherd each. Apart from the employment of casual labourers in agriculture no contract or migrant labourers were employed. Almost all the wages were paid in kind. The degree of monetisation of the village economy itself was much less. The use of bullock or draught animal labour power in agriculture was much higher. But the employment of female hired labour in agriculture was much less. Almost all agricultural labourers were served with food on the farm. The use of any type of machine labour was nil. Artisans were fully engaged by the cultivators either for the manufacture or for the repair of wooden agricultural implements. Jajmani system was very much prevalent then in the village.

Since cash and credit requirements of agriculture were much less then, the farmers were able to store higher proportions of their produce for longer periods till they were assured of the success of the next crop. Marketing was undertaken mainly by the resident based merchants. And the barter system of payments and receipts were prevalent to some extent in the village. And the marketable surplus of agriculture was much less.

Enough of lands were available for leasing-in. The rent charged per acre was also very low. The tenancy was very flexibale. And most of the lands were on Kuttagai basis. Landlord -tenant relations were never exploitative in character and most of the tenants belonged to the upper castes of the village.

Though there were large numbers of bullocks and other draught animals owned by the H.Hs in the village, the ownerships of milch animals and sheep and goats were much smaller in number. The wooden agricultural implements were largely used in agriculture compared to the iron implements.

The prices of both agricultural inputs and outputs were much lower compared to the later years. Dut to low productivity of agriculture the prices of agricultural assets were atleast 10 times lower than the prices prevailing in the mid-eighties.

Compared to the above agro-economic situation prevailing in the mid-sixties, the village had witnessed a rapid transformation of agriculture in the seventies and by the mid-eighties it had consolidated all the gains of modern agriculture (introduction of new seed-fertiliser-technologies). During the period starting from 1970-71 to 1985-86 agriculture was carried on mainly on commercial basis with the large scale use of hired labour rather

than family labour. Paddy came to be cultivated by transplanting high yielding varieties (HYVS) of seeds. Chemical fertilizers and pesticides were largely used in agriculture. Pumpsets irrigation came to complement the already available tank irrigation for agriculture. The productivity of agriculture had gone up from about 15 bags of paddy per acre in the sixties to about 20 bags of paddy per acre in the eighties. The marketable surpluses of the agriculture had gone up enormously. Consequently the resident based merchants were replaced by the non-resident based merchants. However by the mid-eighties the village came to have a mono cropped agriculture and HYV paddy became its main crop. The intensity of agriculture had also gone up rapidly in the village. By the mid-eighties, agriculture was fully mechanised. Consequent to the tractorisation of agriculture the employment of bullock or draught animal labour power had been very much reduced. The human labour employment especially that of female labour had gone up substantially. But the employment of permanent farm servants and cowherds by the cultivators had been very much reduced. The labourers were no longer paid their wages in kind. Again, they were also no longer served with food on the farm. The employment of both contract and migrant labourers in agriculture had gone up. Over the years the use of machine labour power in agriculture had also gone up. And this resulted in the enormous profits earned by the owners of agricultural machinery who hired them out.

The degree of monetisation of the village economy had reached its peak where even the harvest wages were paid in cash. The increased cash and credit requirements of agriculture had increased the post - harvest sales of paddy. And almost

All kinds of payments and receipts were made in cash.

The prices of both agricultural inputs and outputs had gone up considerably. The prices of agricultural assets had increased by several times, thanks to the increased productivity of agriculture.

Larger areas of lands were not available for leasing-in. The rent charged per acre had almost doubled over the years. But most of the tenant lands were leased-in based on Kuttagai. Tenancy relations over the years became more complex. And the landlord-tenant relationships assumed the character of exploitation. Hence over the years tenancy in the village became more selective and exploitative. however, despite the increased non-agricultural activities in the village, the demographic pressure on agricultural land remained the same.

2. Changes in land utilisation

According to the district census handbooks of Chingleput relating to 1971 and 1981 the total area of the village was around 524 acres. The cultivated land accounted for 407.55 acres in 1971 and 402.33 acres in 1981. Out of a total area of 402.33 acres of cultivated land in 1981, 379.71 acres or 94.38 per cent of it was irrigated and 22.62 acres or 5.62 per cent of it was unirrigated. While culturable waste land in 1981 was only 19.86 acres the area not available for cultivation was quite high at 102.58 acres. The village had no forest land.

Table 23 below shows the changes in land utilisation pattern in the village between 1971 and 1981.

Table 23: Changes in land utilisation pattern in the village between 1971 and 1981

Type of use	extent (in acres) 1971	extent (in acres) 1981	absolute change over the years.
1. Irrigated land	380.38	379.71	-0.67
2. Unirrigated land	27.17	22.62	-4.55
3. Culturable waste	4.94	19.86	+14.92
4. Area not available for cultivation	111.15	102.58	-8.57
5. Forests	-	-	-
Total	523.64	524.77	+1.13

Source: District census Hand book - Chingleput, 1971 and 1981.

According to the table, the total area of the village had increased only marginally. While the area not available for cultivation had declined the culturable waste land in the village had increased considerably over the years. Table also shows that while the irrigatied land remained more or less the same the unirrigated land had marginally declined over the years.

3. Changes in the cropping patterr

The data on changes in the cropping pattern of the village were collected from the village Adangal, Account No.2 for the

various Fasli years available in the office of the Tahasildar, Gummidipundi Taluk. We could collect the data for 13 agricultural years although the period of analysis was 22 years starting from 1965-66 to 1986-87. These records provided information on the extents of areas cultivated mainly with paddy crop in the 2 seasons of the agricultural years. And even if some lands were cultivated in the third season these areas were clubbed with the areas cultivated in the second season. The crop raised during September-February was taken as the first season crop. Since over the years, no crops other than paddy was raised in the village all cropped areas had been classified under paddy only. However, these records did not provide any information on the yield rates of paddy in the village in different years

Table 24 provides information on changes in the cropped area in the village during the last 22 years.

Table 24: Changes in the cropped area in the village between 1965-66 and 1986-87

Agricultural year	Cropped area (in acres)			Average for different periods	Intensity of cropping
	1 season	2 season	Total		
1. 1965-66	391.78	84.22	476.00		
2. 1968-69	359.34	8.49	367.83	[illegible]37.41	1.07
3. 1969-70	368.02	100.39	468.41		
4. 1972-73	390.15	84.95	475.10		
5. 1973-74	393.76	14.69	408.45	441.77	1.08
6. 1974-75	394.96	38.13	433.0[illegible]		
7. 1975-76	395.52	45.97	441.4[illegible]		
8. 1976-77	388.10	56.15	444.25	439.61	1.08
9. 1977-78	394.25	117.48	511.73		
10. 1978-79	387.56	173.47	561.03	524.57	1.30
11. 1979-80	395.02	105.93	500.95		
12. 1985-86	391.12	16.55	407.67		
13. 1986-87	417.97	-	417.97	412.82	1.20

Source: Village Adangal Account No.2 - Enathimalpakkam Village
Fasli Nos: 1375, 1378, 1379, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1395, 1396.

The table shows that both the total cropped area and the intensity of cropping remained more or less the same in all the three periods of the late sixties, early seventies and the mid-seventies. This

indicates that even after considerable mechanisation of agriculture by the mid-seventies (there were 15 electric pumpsets and 3 tractors operating in the village at that time) the intensity of cropping remained the same. But this is quite unacceptable given the fact that the installation of 15 pumpsets could have added about 100 acres of more cropped area to what had already been cropped based on the sole source of tank irrigation in the village. But, surprisingly, according to the table the late 70s had witnessed significant increases both in the total area cropped and the intensity of cropping. And by the mid-eighties both the total area and the intensity of cropping had fallen which were even lower than the figures provided on the same for the late sixties. This is of doubtful validity given the fact that by the mid-eighties the mechanisation of agriculture (there were 27 pumpsets and 6 tractors operating in 1985-86) had reached such a high level that even the total cultivated area could be cultivated with pumpset irrigation alone. However what had really gone wrong with the official data relating to the years in the 1970s and 1980s was the fact that they did not include the additional area cultivated in the third season (between June and September). The third crop was being cultivated with the help of pumpset irrigation. Our field data for the agricultural year 1985-86 showed that a total of 600 acres were cultivated in all the 3 seasons of a year (390 acres in September - February season; 60 acres in March - June season and 150 acres in July - September season). This is in sharp contrast to the figure provided by the official sources on the total cropped area for the year 1985-86. As per our field data the intensity of cropping worked out to 1.50 rather than 1.01 as the official data, worked out. However; the official data relating to the late 60s could be taken as reliable because there were no pumpsets or tractors operating in the village the

to bring any additions to the usual extents of areas cultivated either in the second or in the third seasons. Hence, while the gross cropped area had gone up from about 437.41 acres in the late 60s to about 600 acres in the mid-eighties the intensity of cultivation had gone up from 1.07 to 1.50 in the same period.

4. Irrigation

Till 1971, agriculture in the village was solely dependent on tank irrigation. In any given normal rainfall year in the sixties the village tank irrigated about 400 acres of cultivable land, especially in the first season of september to February. The surplus waters of the first season irrigated from a minimum of 50 to a maximum of 100 acres in the second season (February to May). In the sixties, the tank was also not connected with any rivers flowing in the taluk. As far as the total extent of area cultivated by different categories of farmers in the second season was concerned it was very much decided only by the village irrigation committee constituted by all the farmers from time to time. At the tail end of the second season, farmers used to set up about 12 ettrams (lift irrigation system) at the 3 outlets of the tank to irrigate their fields with the remaining shallow waters of the tank. In the late 60s one of the big farmers of the village also pumped out the shallow waters of the tank by a diesel engine on an hire basis. And there was not even a single irrigation well available in the agricultural ayacut of the village then.

Compared to the irrigation situation prevailing in the 60s, the 1970s and the early 1980s had witnessed rapid growth of private irrigation system which came to complement and

substitute the already available tank irrigation system in the village. Between 1970-71 and 1985-86, about 27 bore wells were dug up and fitted with electric pumpsets. By early eighties the tank was also got connected with one of the rivers flowing in the taluk. Further, the ublic Works Department (P.W.D) of the government of Tamil Nadu had undertaken significant improvements to the tank mainly with the help of massive financial assistance (Rs.18.18 lakhs) provided by the European Economic communicyt (E.E.C.) in the year 1985-86. (For details see Appendix II) Both the above said measures resulted in the increased water storage capacity of the tank by about one-fourth of the previous total. However, with the development of private irrigation system the irrigation committees set up previously to regulate the water supply became defunct. And this resulted in the considerable wasteage of tank waters especially in the eighties. The installation of pumpsets mainly irrigated the summer season (June to September) crop. They also helped in the transplanting and harvesting of the rainly season (September to February) crop in those years when the tank received less than the minimum required water. The 27 pumpsets in the village owned by both residents and non-residents could irrigate about 200 acres of land on their own. And this extent of land could be cultivated in any given season even if the rains failed totally for 1 to 2 years.

5. Costs and returns During our field enquiries we also tried to collect the comparable data on an average per acre costs and returns of paddy relating to 1970-71 and 1985-86 from a select group of H.Hs who were more knowledgable on costs and returns. This is apart from the collection of data on the same for the year 1985-86 from our random sample survey. While the first set of data helps us to obtain the maginifudinal changes

between the above said years the latter set of data helps us to analyse the variations in them (costs and returns) between different categories of H.Hs in 1985-86. Comparing the data on costs of paddy between 1970-71 and 1985-86 in table 25 we found that while labour costs had gone up from Rs.216 to Rs.1118 the non-labour costs had gone up from Rs.297 to Rs.1390. Thus, while the labour cost had gone up by about 417 per cent the non-labour cost had gone up by 368 per cent during the last 15 years. The total cost had gone up from Rs. 513 to Rs.2508 per acre. And this worked out to a percentage of 389 over a period of time. The number of labour days used in the per acre cultivation of paddy had also gone up from 52 in 1970-71 to 73 in 1985-86.

Table 25: Changes in per acre costs and returns of Paddy in the village between 1970-71 and 1985-86

Type of costs	1970-71			1985-86		
	No.of days or quantity of inputs		Value in (Rs)	No. of days or quantity of inputs		Value in (Rs)
I. Labour costs	Human labour	bullock labour		Human labour	bullock labour	
1. Ploughing	6	6	48.00	8	8	240
2. Land levelling and bund trimming	1	-	4.00	1	1	15
3. Transporting and fertilising	3	1	22.00	3	1	75
4. Plucking of seed lings	-	-	-	2	-	40
5. Transplanting	-	-		12	-	108
6. Sowing	2	1	12.00	-	-	-
7. Weeding	20	-	60.00	15	-	150
8. Pesticiding	-	-	.	2	-	30
9. Harvesting	20	-	70.00	30	-	460
Sub-total	52	8	216.00	73	10	1118
II. Non-Labour Inputs.						
1. Seed	48kgs		20.00	36kgs		120
2. Domestic manures	10 cart loads		30.00	10 cartloads		120
3. Chemical fertil isers & Pesti-cides	-		-	2 bags (of 80 kgs)		250
4. Electricity charges	-			-		150
5. Depreciation on livestock	-		10.00	-		40

whereas the data on costs of paddy in 1970-71 related to the cultivation of traditional varieties of paddy based on broadcasting method the data on costs of paddy in 1985-86 related to the cultivation of HYv paddy based on transplanting method. However, since the data are related to the small sized farms in both the years one could not see much of a difference in the use of bullock labour and application of domestic manuares in the cultivation of paddy.

Now let us see per acre returns from the cultivation of paddy in 1970-71 and 1985-86.

Table 26: Changes in the per acre returns of paddy between 1970-71 and 1985-86

(In Rs.)

Type of return	1970-71	1985-86
I. Owner cultivation		
1. Average yield per acre	16 bags (80kgs)	21.5bags(80kgs)
2. Average price per bag	60.00	160.00
3. Income from sales of paddy or value of paddy	960.00	3440.00
4. Income from sale of hay or value of hay	100.00	350.00
5. Gross Income per acre	1060.00	3790.00
6. Total costs of cultivation per acre	333.00	2028.00
7. Net profit per acre	727.00	1762.00
8. Net profit in terms of paddy	12.12 bags	11.01 bags
II. Tenant cultivator		
1. Gross income per acre	1060.00	3790.00
2. Total costs of cultivation	513.00	2508.00
3. Net profit per acre	547.00	1282.00
4. Net profit per acre in terms of paddy	9.12 bags	8.01

Source: Purposive sampling enquiry for both 1970-71 and 1985-86

The above table shows that although the total money costs and returns from an acre of paddy cultivation had gone up by 3 to 4 times between 1970-71 and 1985-86 the real incomes earned from the same had declined marginally.[8] This was mainly because of the fact that while the costs of cultivation had gone up by 5 to 6 times the net incomes earned had gone up only by 2 to 3 times between the 2 periods under consideration. Even though the data provided in table 25 were only approximates they still indicate the fact that for the small cultivators and tenants the net real incomes earned from an acre of paddy cultivation between 1970-71 and 1985-86 could have hardly improved.

From costs and returns let us move on to the analysis of variations in them between different categories of agricultural households in the village in 1985-86. Table 27 provides information on the occupational category-wise per acre costs of cultivation in 1985-86. The total costs of cultivation of an acre of HYV paddy in 1985-86 worked out Rs.2099.45 in the village. Between different occupational categories of H.Hs while the labour cost varied from a minimum of Rs.1054.17 to a maximum of Rs.1197.00 the non-labour cost varied from a minimum of Rs.819.42 to a maximum of Rs.1305.23. In the total costs of cultivation of Rs.2099.45, while the labour cost had worked out to 53.39 per cent the non-labour cost had worked out to 46.61 per cent. The table also reveals that while the total costs of cultivation incurred by the tenants was the maximum at Rs.2457.81 the total costs incurred by the big farmers was the least at Rs.1873.59. Compared to all other categories of farmers the big farmers incurred the least costs on both the labour and the non-labour inputs in the cultivation of an acre of HYV paddy.

Table 27: Occupational category-wise per acre average costs of cultivation of paddy in 1985-86.

Occupational category	Cost per acre labour	Cost per acre non-labour	Cost per acre total	percentage of labour cost in the total	percentage of non-labour cost in the total
1. Big farmers (owing 10 acres and above)	1054.17	819.42	1873.59	56.26	43.74
2. Medium farmers (owing 5.01 to 9.99 acres)	1197.00	827.80	2024.80	59.12	40.88
3. Small farmers (owing 2.51 to 5.00 acres)	1127.75	929.75	2057.50	54.81	45.19
4. Marginal farmers (owing upto 2.50 acres)	1135.60	987.42	2123.02	53.49	46.51
5. Tenants	1152.58	1305.23	2457.81	46.89	53.11
6. Non-agricultural labourers with owned land for cultivation	1058.33	1001.66	2060.00	51.38	48.62
Average for all groups	1120.90	978.55	2099.45	53.39	46.61

Source: Random sample survey for 1985-86.

And these need explanations. What reduced the costs incurred by the big farmers on labour were the use of their own pumpsets and tractors which saved them from hiring-in a considerable number of both human and bullock labour days. In addition, they also used the cheap migrant labourers for some important agricultural operations such as harvesting. They also paid lower wage rates to the labour supplied by their own tenants in the village. And what minimised their non - labour costs incurred in the per acre cultivation of paddy were the use of more of their own domestic manures (the 7 big farmers totally owned about one-third of the total livestock in the village) and seed etc. Much more than these was the use of their own working capital which saved them from paying any higher interest amounts to others. Further, due to large acerage of cultivation, the depreciation on livestock and machinery also worked out cheaper. In case of tenants their rent payments had pushed up their total per acre costs of cultivation to its maximum in the village. However, the variation in the total costs of cultivation between different categories of farmers worked out to around Rs.584 or a little less than one-third of the total cost incurred by the big farmers. And this variation obtained in the per acre costs of cultivation of HYV paddy by different categories farmers in the village could have made a crucial difference to the net profits earned by them from agriculture.

Table 28: Occupational category -wise average returns from an acre of paddy cultivation in 1985-86

Occupational category	A.V. yield per acre (in bags of 80kgs each)	Gross value of output per acre (including by product) (in Rs.)	A.V. total cost of cultivation per acre (in Rs)	Net profit earned per acre (in Rs)
1. Big farmers	24.83	4571.66	1873.59	2698.07
2. Medium farmers	21.25	3831.25	2024.80	1806.45
3. Small farmers	17.00	2810.00	2057.50	752.50
4. Marginal farmers	17.40	2920.00	2123.02	796.98
5. Tenants	18.66	3058.33	2457.81	600.52
6. Non-agricultural labourers with land	17.00	3160.00	2060.00	1100.00
Grand Averages	19.36	3391.87	2099.45	1292.42

Source: Random sample survey for 1985-86.

Now let us see how the net and gross incomes earned from agriculture varied in between different categories of agricultural H.Hs in 1985-86. But the variations in incomes earned depended not only on the variations obtained in the total costs of cultivation but also on the variations obtained in the yield levels of different sizes of farms in the village. Table 28 provides information on the category-wise returns from an acre of HYV paddy cultivation in 1985-86. As has already been shown in the table above the yield rates varied from a minimum of 17 bags to 24.83 bags in 1985-86.

The maximum yield rates had been achieved only by the bigger farmers of the village followed by the medium farmers and tenants. The yield rates achieved by the small and non-agricultural labourers with land varied between 17 and 18 bags. The average yield rate of HYV Paddy in the whole village was 19.36 bags per acre. However, both the gross and net values of output obtained in different categories of farms depended not only on yield rates and costs of cultivation but also on the prices at which different farmers sold their respective outputs in the village. In our survey year of 1985-86 the prices of a bag of paddy varied from a minimum of Rs.120 immediately after the harvest to about Rs.190 in the lean season. Hence the data in the table on the net profits earned from an acre of HYV paddy cultivation varied from a minimum of Rs.600.52 in the tenant farms to Rs.2693.07 in the big farms. Hence the net profits earned from the cultivation of an acre of HYV paddy by the former was only 22.26 per cent of the total net profit earned by a big farmer. The net profit earned by the small and marginal farmers constituted only 27.89 per cent and 29.54 per cent respectively of the total net profits earned from an acre of HYV paddy cultivation by the big farmers in 1985-86. The average net profit earned from an acre of HYV paddy cultivation in 1985-86 was Rs.1292.42.[10] However the table above showed much greater variation in returns compared to costs in between different categories of agricultural H.Hs in the village in 1985-86.

6. Area and Production

With the data available on intensity of cropping, operated area, gross cropped area and average yield rates from different sources we have tried to estimate the total agricultural production of the village both for 1969-70 and 1985-86. These estimations have been made separately for both the non-resident and resident

farmers together first and for resident farmers alone. Table 29 shows that between 1969-70 and 1985-86 while for the whole village the gross cropped area

Table 29: Estimates of area and production in 1969-70 and 1985-86

Year	Intensity of cultivation	Operated area (in acres)	Gross cropped area (in acres)	A.V. yield per acre (in bags)	Total production (in bags)
I. Residents & non-Residents combined					
1. 1969-70	1.15	-	468.41	16.00	7494.55
2. 1985-86	1.51	-	607.55	21.50	13062.32
3. percentage increase over the year	31.30	-	29.70	34.37	74.29
4. Simple rate of of growth of agricultural production per year	-	-	-	-	4.64
II. only for Residents					
1969-70	1.15	221.80	255.07	16.00	4081.12
1985-86	1.51	240.86	363.70	19.36	7041.23
3. percentage increase over the years	31.30	8.59	42.59	21.00	72.53
4. Simple rate of growth of agricultural production per year	-	-	-	-	4.53

Sources: 1. Village Adangal Account No.2, Fasli 1379 year 1969-70

2. District census Handbooks - Chingleput relating to 1971 & 1981 and
3. Field enquiry data for 1985-86.

had gone up by 29.70 per cent for the resident farmers it had gone up by 42.59 per cent. Again, while for the whole village the yeild rate had gone up by about one-third for the residents it had gone up only by one-fifth. But the increase in total production in both the cases was only 72 to 75 per cent of the 1969-70 level. However, during the last 16 years, the agricultural production in both the cases had increased at a simple rate of growth of about 4.5 per cent a year.

Now let us see the distribution of total agricultural production among the different resident categories of H.Hs in 1985-86. The data in table 30 shows that

Table 30, Estimates of area and production among different categories of resident households in 1985-86

Occupational category	Total operated area (in acres)	Intensity of cultivation	Gross cropped area (in acres)	A.V. yield per acre (in bags)	Total production (in bags)	As % age to the total
1. Big farmers	108.46	1.41	152.92	24.83	3797.00	49.30
2. Medium farmers	35.60	1.29	45.92	21.25	975.80	12.67
3. Small farmers	23.20	1.95	45.24	17.00	769.08	9.99
4. Marginal farmers	21.46	1.93	41.41	17.40	720.53	9.35
5. Tenants	34.16	1.61	54.99	18.66	1026.11	13.32
6. Agricultural labourers	8.87	1.25	11.08	18.00	199.44	2.59
7. Non-agricultural labourers	7.66	1.34	10.26	17.00	174.42	2.26
8. Artisanal and service H.Hs	1.45	1.30	1.88	20.74	38.99	0.51
Total	240.86	1.51	363.70	19.36	7701.37	100.00

Source: Field random sample survey data for 1985-86

almost half of the total production in 1985-86 was brought about just by 7 big farmers in the village. The intensity of cultivation in their farms was 1.41 only. The above table also reveals that while the high intensity of cultivation was associated with the lower yield rates the low intensity of cultivation was associated with the higher yield rates in the village. This was said to be mainly due to the augmentation of natural fertility of the soil in the low intensity farms.

7. Distribution of agricultural incomes

In the light of information available on the production of agricultural produce it also becomes necessary to examine the net incomes generated in agriculture and how they were distributed among the different categories of agricultural H.Hs in 1985-86. Table 31 provides information on agricultural income generation and distribution in 1985-86. The data in the table below reveal an extreme concentration of net agricultural incomes in the hands of a few big farmers of the village. Though they were responsible for only half of the total produce they had successfully netted out about two-thirds of total agricultural incomes to themselves in 1985-86. The relatively poorer groups of H.Hs such as small and marginal farmers and tenants could each earn just about 5 per cent of the total income generated in agriculture 1985-86. The agricultural labourers, non agricultural labourers and artisanal and service H.Hs could totally earn less than even 4 per cent (3.71) of the total net incomes generated in agriculture. In other words, while just

Table 31: Agricultural income generation and distribution among different resident categories of agricultural households in 1985-86

Occupational category of households	No.of H.Hs	Gross cropped area (in acres)	Net profit	Total	As % age to the total
1. Big farmers	7	152.92	2698.07	412588.86	66.70
2. Medium farmers	4	45.92	1806.45	82952.18	13.41
3. Small farmers	6	45.24	752.50	34043.10	5.50
4. Marginal farmers	14	41.41	796.98	33002.59	5.34
5. Tenants	18	54.99	600.52	33022.59	5.34
6. Agricultural labourers	36	11.08	823.96	9129.47	1.48
7. Non-agricul tural labourers	18	10.26	1100.00	11286.00	1.82
8. Artisanal and service H.Hs	3	1.88	1341.99	2522.94	0.41
Total	106	363.70	1240.06	618548.08	100.00

Source: Estimates based on random sample survey.

7 H.Hs earned two-thirds of the total incomes generated (from the cultivation of HYV paddy) the rest of 99 H.Hs could earn only about one-third of the total income generated from agriculture.[11] While the average net income earned per net cropped acre in 1985-86 worked out to Rs.1240.06 the average net income earned per gross cropped acre worked out to Rs.1700.71 in the village.

8. Distribution of agricultural produce

With the data collected through both the purposive and random sampling enquiries on average seed requirements, consumption levels, wage and rent payments etc. we have worked out the actual distributions of total agricultural produce as prevailed during 1969-70 and 1985-86. Before proceeding to the analysis of data in table 32 it is worth stating the methodologies adopted for obtaining the estimated distributions for 1969-70 and 1985-86.

For the year 1969-70 we have largely depended on the data gathered from the purposive samplong enquiry. The total quantity of seed required for the cultivation of paddy was obtained by multiplying the per acre seed requiiement of 48 kgs with the gross cropped area (G.C.A). The total quantity of consumption was obtained by multiplying the average H.Hs consumption of 20 bags of paddy per year with that of the total number of households operating land in the village. This average consumption of 20 bags per H.H also included the provision of food to almost all categories of agricultural labourers then. Total wage payments were calculated based on an average of 2 bags of paddy (including harvest wages) paid per acre. In this connection it should also be noted that in the late 60s almost all wages were paid in kind rather than

in cash. And there were also large number of permanent farm servants and cowherds employed by the cultivator H.Hs then on an annual kind wage payment system. The total rent payment was obtained by multiplying the per acre average of 3.5 bags with the total land leased-in then. The data on payments made to the artisanal and service H.Hs was collected directly from the receipient households themselves.

The data for the year 1985-86 came from the random sampling enquiry. The average per acre seed requirement was calculated at 36 kgs rather than 48 kgs as obtained for the year 1969-70. This difference arose mainly because of the fact that the transplant paddy required less of seed compared to the broadcast paddy. And the average consumption requirement per H.H in 1985-86 was calculated at 17 bags of paddy (only for cultivator H.Hs) instead of 20 bags as obtained for 1969-70. This difference arose mainly because of the fact that the cultivaters no longer employed such large number of permanant servants, cowherds and casual labourers who were also previously supplied with food on the farm. Wage payments made to the labourers in kind was obtained both from the random and purposive sampling enquiries. Since almost all wages including the harvest wages were paid only in cash the collection of data on this became much easier for us. As for as the payments made to the artisanal and service H.Hs were concerned we collected the data both from the paying and receipient H.Hs in the village. The total rent payment made in 1985-86 was obtained by multiplying the per acre average of 7 bags per year with that of the total extent of area leased-in.

Coiming to table 32, we found the worsening distribution of total agricultural produce among production and consumption items for 1969-70 and 1985-86.

Table 32: Changes in the distribution of total agricultural produce between 1969-70 and 1985-86

Item	1969-70		1985-86	
	Quantities (in bags of 80kgs each)	As % age to the total production	Quantities (in bags of 80kgs each)	As % age to the total production
I. Production				
1. Total number of H.Hs operating land	67	-	75	-
2. Gross cropped area (in acres)	255.07	-	363.70	-
3. Total agricultural production	4081.12	-	7041.23	-
II. Distribution				
1. As seed	153.04	3.75	163.66	2.32
2. for consumption	1340.00	32.83	1275.00	18.11
3. payments to artisanal and service H.Hs	62.50	1.53	38.50	0.55
4. payments to labourers				
a) total	630.14	15.44	130.00	1.85
b) for casual labourers	510.14	-	18.00	-
c) for migrant labourers	-	-	80.00	-
d) for permanent servants	80.00	-	32.00	-
e) for cowherds	40.00	-	-	-
5. Payments towards land rent	350.00	8.58	488.53	6.94
6. Total agricultural produce distributed	2535.68	62.13	2095.65	29.77
7. Total marketable surplus of agriculture	1545.44	37.87	4945.54	70.23

Source: Purposive and random sampling enquiry for 1985-86.

whereas in 1969-70 about 62 per cent of the total produce was distributed for different purposes only about 30 per cent was distributed in 1985-86. Consequantly, the marketable surplus of agriculture had gone up from 1545.44 bags in 1969-70 to 4945.54 bags in 1985-86 which worked out to a very high net increase of 220 per cent over the 1969-70. In other words the marketable surplus had gone up three times thanks to the cultivation of HYV paddy and the payment of wages in cash. The percentage of total production available for the market had also substantially gone up from 37.87 in 1969-70 to 70.23 in 1985-86. But over the years the respective shares of a) seed b) consumption c) wage payments to the agricultural labourers and artisanal and service H.Hs and d) rents paid to the landlords in the total production of agriculture had significantly gone down.

Now let us see which agricultural group had the largest share in the total marketable surplus of agriculture in 1985-86. It has already been noted that about half of the total production was brought about by just 7 big farmers in 1985-86. And only this group should have accounted for the largest share in the total marketable surplus of agriculture in that year. Table 33 provides information on the production and distribution of agricultural produce relating only to the big farmers. The table below shows that while all the land operating H.Hs in the village had distributed about 30 per cent of their total production the big farmers had distributed only about 12 per cent in 1985-86. Consequently, in the total marketable surplus of 4945.54 bags the big farmers themselves had accounted for 3345.93 bags or 67.65 per cent. Thus, in the total marketable surplus in 1985-86 about two-thirds were contributed by the 7 big farmers of the village. And this magnitude went in direct relationship with their share of two

thirds of total net incomes generated in agriculture in 1985-86.

Table 33: Production and distribution of agricultural produce by the big farmers of the village in 1985-86

ITEM	Quantities (in bags of 80kgs each)	% age to the total production
I. Production:		
1. Total number of H.Hs operating land	7	-
2. Gross cropped area (in acres)	152.92	-
3. Total agricultural production	3797.00	49.30
II. Distribution:		
1 As seed	68.81	1.81
2. for consumption	175.00	4.61
3. payments to artisanal and service H.Hs	21.00	0.55
4. Payments to labourers		
a) Total	122.00	3.21
b) for casual labourers	10.00	-
c) for migrant labourers	80.00	-
d) for permanent servants	32.00	-
e) for cowherds	-	-
5. Payments towards land rent	64.26	1.29
6. Total agricultural produce distributed	451.07	11.88
7. Total marketable surplus	3345.93	88.12

Source: Purposive and random samplong enquiry data for 1985-86.

9. Agricultural marketing

With a sharp increase in the marketable surplus of agriculture over the years the resident based merchants were replaced by the non-resident based urban merchants. As has already been noted that the marketable surplus had shown a net increase of 220 per cent between 1969-70 and 1985-86. Definitely the former resident based merchants could not have handled the marketing of such huge quantities of produce mainly for want of enough of capital. Instead over the years there emerged 3 paddy brokers in the village mainly working for the urban based merchants. And the brokers collected paddy mainly from the small peasants and tenants on payment of Rs.3 per bag by the non - resident merchants. In the late 60s when only the traditional paddy was raised in the village only small quantities of produce were sold by the farmers either in the peak or lean seasons. And a higher proportion of the marketable surplus then was said to be sold only at the tail end of the lean season when the farmers were assured of the next crop. Moreover, technically the traditional varieties of paddy can be stored for a longer time compared to HYV paddy without much of damage or loss of weight. Because of the fact farmers could also earn higher prices on the sale of traditional varieties paddy then. And the marketing pattern of almost all categories of Cultivator H.Hs was more or less the same.

Compared to the late 60s situation of marketing the marketing of HYV paddy in the mid - 80s had changed completely. In the mid-80s the marketing pattern of different categories of farmers had differed very much with the small owner producers and tenants opting for the sales of higher proportions of their produce in the post - harvest seasons at lower prices and the bigger farmers opting for the sales of higher proportions only in

the lean agricultural seasons at higher prices. However, by the mid -80s some of the big farmers of the village had also resorted to the marketing of their own produce directly without any intermediaries. They transported their grains to the urban centres, converted the paddy into rice and sold the same to the rice mandies (whole sale merchants) in Madras City. In this process some of them earned about Rs.50 more on every bag of paddy. Two big farmers of the village marketed 200 bags of paddy each directly and could earn an additional amount of about Rs.10,000 each.

As far as the credit links with the merchants were concerned we observed that a few big and medium farmers of the village were supplied with fertilizers as loan on the explicit understanding that they would market their produce only to them (merchants). And the small owner farmers were not provided with any credit supplied and their produce were collected by the paddy brokers of the village. However, these non-resident based merchants were said to be using false measures and weights in the purchases of grains forcing the farmers to loose about 8 to 10 kgs per every bag of paddy sold. However, the payments of cash wages even for harvesting compelled quite a large number of farmers to sell atleast considerable proportions of their total produce on the threshing floor itself without minding the weights and measures used and the prices offered by the merchants. And, who ever had the cash on hand could buy the grains with assured high rates of profit. However, some of the big farmers who had ready cash on hand could pay cash to the harvest labourers and stored the grains while other big farmers employed migrant labourers who should be paid their contract wages only in kind which were lower than the contract money wages paid for the similar work.

Some of the big and medium farmers of the village who

leased-out their lands insisted that their tenants should market their produce only to them especially in the post-harvest period. These grains were stored by the former for 2 to 3 months and sold them at higher prices. The non-resident landlords directed their tenants to sell part of their rental grains immediately after the harvest and paid them in cash. Thus, the increased degree of monetisation associated with the increased marketable surplus led to the faster and frequent sales of produce even by the smaller farmers at any prices offered by the merchants.

10. Agricultural credit

While the public sources had largely financed the purchases of tractors, pumpsets and livestock the private sources had largely financed crop cultivation operations in the village over the years. By the mid eighties the commercial, land development and co-operative banks and the state government had advanced a total amount of Rs.3,79,700 to about 29 H.Hs in this village. Out of this total loan amount of Rs.3,79,700 about Rs.2,96,000 had been provided to the 5 big farmers for purchase of tractors. And this worked out to 77.96 per cent of the total loan amount provided by the public sources at lower interest rates of 10 to 12 per cent. Nearly 20 agricultural labour H.Hs were provided with a total loan amount of Rs.23,700 for the purchases of bullocks by the government under its IRDP in 1981. One medium and 2 small farmers were provided a total loan amount of about Rs.24,000 for the purchase of pumpsets. However, it was only the co-operative banks which provided a total loan amount of Rs.21,000 for the cultivation of crops to 4 farmers in the village in the mid-seventies. It became very clear that it was only the 5 big farmers of the village who benefited the most from the provision

of low cost credit by the public agencies.[12]

As far as the borrowing for crop cultivation was concerned while the big and medium farmers did not borrow any money from public or private sources the small and marginal farmers and tenants had resorted to borrowing mainly from private sources. The 19 sample H.Hs who belonged to the 3 groups had borrowed a total amount of Rs.50,100 from different private sources in 1985-86. Out of this total amount one half came from money-lenders who charged higher interest rates varying from 36 to 48 per cent per year. The other half came from the land-lords and relatives and friends. However, the private borrowings worked out to Rs.2385 per H.H belonging to any of these 3 groups. Thus, while a few big farmers could obtain about three-fourths of the total loan amounts disbursed by the public sources at lower interest rates of 10 to 12 per cent a year all other categories of agricultural H.H could obtain only less than one-fourth of the total loan amounts. Further even for crop cultivation, while the big and medium farmers did not borrow any monies at higher interest rates the small and marginal farmers and tenants borrowed considerable amounts of monies from private sources for the same purpose at very high interest rates.

11. Agricultural mechanisation

A: Tractors

In all there were 5 tractors and one power tiller operating in this village in 1985-86. While all the 5 tractors with 35 to 40 horse power each were owned and operated by the 5 big farmers the one power tiller with 15 horse power was owned and operated by a medium farmer. All the tractors were bought between 1974 and 1984 with the financial assistance of commercial banks and

land development banks located in the district of Chingleput. However, the price of a tractor with all its accessories had gone up very much from about Rs.61,000 in 1974 to 1,35,000 in 1984. Thus, those who bought tractors in the mid-70s benefited enormously by way of appreciation in the value of this asset by about 121 per cent within a period of a decade. While the 3 big farmers purchased the tractors in the mid-70s the other 2 purchased them in the early 80s. One of the medium farmers bought his power tiller only in 1984 at a cost of Rs.30,000.

Normally the lending banks insisted on the mortgage of atleast 10 acres of land and the initial deposit of atleast 10 per cent of the total cost of the tractor. It was only after the purchaser of the tractor satisfying the 2 requirements the banks sanctioned the required loan at 10 per cent rate of interest. The total loan amount was expected to be paid with interest in 10 yearly instalments. However, the provisions of the tractor loan were such that no category of farmers other than the big farmers could be expected to buy the tractors in the village. This was why one of the medium farmers who was owning 8 acres of land had opted for the purchase of only a power tiller rather than a tractor.

Coming to the operational cost of a tractor one can envisage a lifespan of about 20 years. And the depreciation worked out to about Rs.5000 a year. For every hour of operation it consumed 4 to 5 litres of diesel which cost the farmer around Rs.20. The big farmers used the tractors for a minimum of 10 hours in the per acre cultivation of paddy in 1985-86. This 10 hours included the time spent by the tractor mainly in ploughing, transportation and threshing of grains etc. When the farmers hired-out their tractors they

charged Rs.100 per acre of ploughing or per hour of threshing in 1985-86. Normally any tractor-owing big farmer who cultivated a minimum of 20 acres of gross cropped area could expect to earn or save about Rs.20,000 a year. In this the operational and depreciation cost worked out to about Rs.10,000 a year. So there was a net saving of Rs.10,000 a year for the owner cultivator using his own tractor. In addition, these big farmers used to hire out their tractors to other farmers both within the village and outside. Since it became necessary that HYV paddy needed to be threshed only by the tractor because of its shorter stalks almost all categories of farmers in 1985-86 engaged tractors for threshing operation. Each tractor in the village had earned a net minimum of about Rs.10,000 a year. Three out of the 5 big farmers who bought tractors in the mid-70s had already cleared their loan amounts due to the banks. Thus, the banks had helped very much the big farmers of the village to acquire this one lakh Rupees worth of asset without much of a financial burden imposed on them. Apart from the gain in the value of an high value asset like the tractor the timely cultivation of crops pushed up the per acre yield rates in the big farms over the years.

B. Pumpsets

There were altogether 27 pumpsets operating in the village in 1985-86. Out of 27 pumpsets 21 were owned by the residents and the rest 6 were owned by the non-residents. Prior to to the year 1970-71 there were no pumpsets operating in this village. Electricity came to the village only in 1969 and the digging of borewells and the installation of pumpsets were started only from 1970-71. Initially, the cost of installation of a pumpset was around Rs.15,000. And this had jumped to

around Rs.25,000 by early 80s and further to Rs.35,000 by mid-80s. The residents had installed about 15 pumpsets in the 70s and the rest 6 pumpsets in the early 80s. However, by mid-80s there was one pumpset for every 15 acres in the agricultural ayacut of the village. The life of a pumpset can be taken as around 20 years and hence the depreciation on it could work out around Rs.1,500 a year. There were no major repairs coming to the pumpsets every year expect for cleaning the borewells and changing the copper coil of the motor once in 4 years both of which might cost around Rs.1,000 per occasion.

After the installation of pumpsets the area under cultivation especially in the summer season (June to September) had gone up quite significiantly. Prior to 1970-71 there were no crops raised in this season due to lack of irrigation. In addition, the installation of pumpsets had enabled the farmers to switch over from the broadcast method of paddy cultivation to the transplant method. Even in the regular season of September to February the pumpsets enabled the farmers to transplant the paddy much before the tank received the water for irrigation. However, the pumpsets were mainly operated in the summer seasons when the tank became dry. In addition, the summer season crop was also preferred by the farmers because of the per acre yield rates of paddy were higher compared to the yield rates obtained in the other 2 seasons. Normally, a pumpset in this village irrigated about 7 to 8 acres of land in the summer season. All pumpsets put together irrigated about 200 acres of land in this season. The samll farmers who owned pumpsets but did not have enough of land to cultivate let out their surplus pumpset water to other farmers' fields on the charge of 6 bags of paddy per acre especially in the summer season. In other seasons, the pumpset

owners charged about Rs.5 per hour. Normally, a pumpset in this village on an average earned about 10 bags of paddy and Rs.500 in cash in the year 1985-86. Moreover, it was not difficult for the pumpset owners to collect their electricity tariff amounts from others by selling water. In the early 80s the electricity charges for the pumpsets were very much reduced by the state government when it levied flat charges based on the horse power of the motor rather than the use of total power by the motor. This became very advantageous for the big farmers who used their pumpsets for longer periods compared to the small farmers but paid the equal charges to the electricity department . Normally, the electricity department charges Rs.75 per Horse power. And in the village most of the motors fitted were of 7.5 horse power. Hence each pumpset owner paid about Rs.562 per year per motor irrespective of the quantum of power used.

12. Labour utilisation in agriculture

Over the years the number of human labour days used in the per acre cultivation of paddy in the village had gone up from about 52 days in 1970-71 to about 72 days in 1985-86.[13] This increase was brought about mainly by the change in the method of paddy cultivation from the broadcasting of seed to the transplanting which sharply increased the number of female labour days used in agriculture. The number of bullock labour days used in the per acre cultivation of paddy had marginally gone up from 8 to 10 days but only in the non-mechanised farms. However, it is important to analyse the labour use pattern in agriculture rather than analysing the mere changes in the total labour days in agriculture. In the late-sixties there were only two types of labour used and they were: a) owned human

and bullock labour and b) hired human and bullock labour. And both the types of labour came mainly from the resident H.Hs. In contrast, the late 70s and the early 80s had witnessed the use of more of non-resident human labour and machine labour power in agriculture. And these had produced their own negative effects on the use of local labour power in agriculture. With this background, let us see the labour use pattern of different categories of H.Hs in the village in 1985-86. Table 34 provides the relevant information.

Table 34: Labour use pattern of different categories of farmers in 1985-86

(in days of 8 hours each) (All are averages)

Category of farmers	No.of sample H.Hs	No.of days of different types of labour used.						
		Own human labour	own bullock labour	own tractor (in hrs)	hired human labour	hired bullock labour	hired tractor (in hrs)	outside the village and migrant labourers.
1. Big farmers	6	2.67	2.00	10.00	36.83	1.50	-	29.16
2. Medium farmers	4	6.50	3.75	1.25	41.50	3.25	1.75	25.50
3. Small farmers	4	9.50	2.75	-	43.50	5.25	1.75	20.00
4. Marginal farmers	5	9.40	3.20	-	48.80	5.00	1.70	15.00
5. Tenants	12	25.74	4.58	-	33.33	4.00	1.00	12.00
6. Non-agricultural labourers with land	3	-	-	-	60.67	7.67	1.5	12.00
Average for all groups	-	8.97	2.71	1.88	44.10	4.44	1.28	18.94

Source: Our random sample survey for 1985-86.

According to table 34, on an average, 72 days of human labour, 7 days of bullock labour

and 3 hours of tractor labour were used in the per acre cultivation of paddy in 1985-86. However, in the total of 72 days of human labour days about 9 days were accounted by the own or family labour and 19 days were accounted by the migrant labourers and another 44 days were accounted by the local hired labourers. The use of machine labour power in agriculture was also considerable at an average of 3 hours per acre. Of all the 6 categories of H.Hs while tenants had used the largest number of days of their own labour the non-agricultural labourers with land had used the largest number of days of hired local labourers. The big farmers had used the largest number of outside the village and migrant labour days in the per acre cultivation of paddy in the village. And almost all categories of H.Hs with the exception of big farmers had hired - in the tractor atleast for more than an hour in the per acre cultivation of paddy in 1985-86.

13. Agricultural labour, employment and income

In all there were 86 casual labourers, 2 permanent servants and 2 cowherds working in the village in 1985-86. These labourers were supplied by the 36 agricultural labour, 10 tenant, 5 marginal farmer and 2 non-agricultural labour H.Hs of the village. While 68 casual labourers, 2 permanent servants and 2 cowherds were supplied by the 36 agricultural labour H.Hs the rest 18 were supplied by the 17 H.Hs who belonged mainly to other occupations. Out of a total of 86 casual agricultural labourers 42 were males and 44 were females. While the casual labour supply per agricultural labour H.H worked out to 1.89 the same with respect to other categories of H.Hs worked out to just 1.05 per H.H.

For the collection of data on employment and income we had

covered 25 agricultural labour H.Hs which supplied 38 casual labourers, 2 permanent servants and 2 cowherds. But these 2 cowherds were not attached to any cultivator H.Hs; instead they worked independently in grazing the animals of others for which they were paid Rs.5 per animal per month. The 2 permanent servants were attached to 2 big farmer cultivator H.Hs for which they were paid each about Rs.2,500 a year mainly in grains and clothes excluding food served to them. However, our sample data revealed that while for male casual labourers the employment in agriculture varied from minimum of 25 days to a maximum of 279 days the same for female casual labourers varied from a minimum of 78 days to a maximum of 256 days in a year. On an average while a male casual agricultural labourer had worked for 116 days the female casual labourer worked for 154 days in 1985-86. Thus, the female labourers worked for more number of days in agriculture compared to the male labourers.[14] The smaller number of days in the case of male casual labourers were mainly due to their participation in some of the high - wage non-agricultural activities both within and outside the village.

As for as the incomes earned from casual labour employment in agriculture was concerned it was observed that they varied from Rs.724 to Rs.2943 per casual labourer and from a minimum of Rs.724 to a maximum of Rs.5353 per H.H per year. Thus, the average incomes earned per person and per H.H per year respectively worked out to Rs.1398 and Rs.2125. The non-agricultural employment per agricultural labour H.H had worked out to about 25 days in 1985-86. And the per H.H income earned from this source on an average worked out to Rs.439 in the same year. Thus, the total average income earned by an agricultural labour H.H from the two sources worked out to Rs.2564 per year and Rs.214 per month in 1985-86.[15]

14. Wages

With the help of both the purposive and random sampling enquiries we were able to collect the data on average wage rates paid to different categories of agricultural labourers in 1970-71 and 1985-86. It has already been noted that over the years the kind wage payment system had replaced the cash wage payment system in the village. But the discrimination in the payment of different wage rates even for similar operations between males and females persisted over the years without any change. In addition, the payments of perquisites such as the provision of meals on the farm to the labourers had been discontinued atleast from the mid-seventies. The cowherds were no longer paid their fixed annual wage payments; instead they were paid the piece wage rates per animal per month. And it was only the permanent farm servants who were still paid their monthly kind wage payments with all the associated perquisites. Table 35 provides the information on the changing levels of wages between 1970-71 and 1985-86.

Table 35: Changes in the wage rates paid to different categories of agricultural labourers between 1970-71 and 1985-86

(All wages per day of 8 hrs)

Type of agricultural operation	1970-71 Cash (in Rs)		in Kind (in Q)		Perqui sities	1985-86 Cash in ([illegible])	
	Males	Fema les	Males	Fema les		Males	Fema les
I. Casual labourers enaged in							
1. Ploughing with bullocks	8.00	-	-	-	2 meals	25.00	-
2. Land levelling and bund trimming	3.00	-	4.5kgs of paddy	-	"	12.00	-
3. Fertilizing	3.00	-	"	-	"	12.00	-
4. Sowing	3.00	-	"	-	1 meals	-	-
5. Transplanting	-	2.50	-	-	1 meal	-	9.00
6. Weeding	3.00	2.50	"	3.5kgs of paddy	1 meal	10.00	8.00
7. Pesticiding	-	-	-	-	-	15.00	-
8. Harvesting	—	-	4.5kgs of paddy	3.75kgs of paddy	2 meals	13.00	11.00

Source: Our purposive and random sampling enquiry data for 1985-86.

A permanent farm servant in 1970-71 was paid 36 kgs of paddy per month plus 30 cents of land for cultivation with the associated perquisites of 3 meals a day and 2 sets of clothes per year. The same permanent farm servant in 1985-86 was paid 72 kgs of paddy per month plus 30 cents of land for cultivation with the associated perquisites of 2 meals a day and 2 sets of cloths per year.

A cowherd in 1970-71 was paid 18 kgs of paddy plus 20 cents of land for cultivation with the associated perquisites of 3 meals a day and 2 sets of clothes per year. The same cowhered in 1985-86, if engaged by any cultivator H.H was paid 24 kgs of paddy per month with 2 meal a day without any land for cultivation. Instead, the cowherds in 1985-86 were paid a fixed rate of Rs.5 per animal per month.

Now coming to the table 35, we found that on an average while a male labourer was paid 4.5 kgs of paddy per day the female labourer was paid 3.5 kgs of paddy per day with 1 or 2 meals a day in 1970-71.[16] Of course, the cash wage rates were also paid rarely on demand from the agricultural labourers. The receipt of cash wages was left to the preferences of agricultural labourers then. More or less the same wage rates were paid even for harvesting. Only the casual labourers were engaged for harvesting and they were necessarily paid their wage rates only in kind.

In contrast to 1970-71, we observed cash payments being made in 1985-86. While the male casual agricultural labourer was paid on an average Rs.12 per day the female casual agricultural labourer was paid around Rs.9 per day. Though harvesting was done on a contract basis ranging from Rs.360 toRs. 450 per acre

(depending on the distance from the field to the threshing floor) the persons who acquired the contracts from the cultivators paid the labourers cash at the wage rates of Rs.13 for males and Rs.11 for females per day. Normally, a person (who was also an agricultural labourer) who obtained the contract from the cultivators earned a minimum income of Rs.50 per acre without doing any physical work. It was a clear case of agricultural labour leaders exploiting their own fellow labourers in the village. (For more details see Appendix - III)

However, between 1970-71 and 1985-86 there was a definite increase in the wage payments made especially to the permanent farm servants in the village. Since this increased payments was also associated with even greater increases in the labour demanded from them in modern agriculture not many agricultural labourers were available for working as permanent farm servants. Consequently, the number of permanent servants working in the village fell from 20 in 1970-71 to 2 in 1985-86. The same had happened even with regard to the number of cowherds employed in the village. Payment of wage rates went up even in real terms from 4.5 kgs per male per day with 2 meals a day to 6 kgs (1 kg of paddy in 1985-86 was priced at Rs.2 in the village) per day without meals. And for the females it went up from 3.5 kgs of paddy per day with one meal to 4.5 kgs of paddy per day without meals. Even if we deduct half a kg of paddy towards 1 meal served to the labourers there was still a slight increase of about 0.5 kgs of paddy per male or per female per day between 1970-71 and 1985-86. However, the increase in the real wage rates paid to casual agricultural labourers even over a period of 15 years could at best be marginal rather than substantial.

15. Prices

The changing price levels of different capital and consumer goods items in a village economy play a very important role in the determination of real income changes among the different categories of households over a period of time. Our purposive sampling enquiry with elderly persons and traders in the village who were more knowledgeable about the chaning price situation in the village enabled us to work out a table which showed the changes in the absolute price levels of different groups of assets and consumer goods and services between 1970-71 and 1985-86.[17]

Table 36: Changes in the absolute price levels of different groups of capital and consumer items in the village between 1970-71 and 1985-86

Group of items	1970-71 prices (in Rs.)	1985-86 prices (in Rs.)	Net percentage increase over 1970-71 prices
I. Agricultural Products			
1. I.R.50 (per bag of 80 kgs)	-	160	-
2. White ponni " ")	-	200	-
3. Hybrid sirumani " ")	-	180	-
4. Biokonda " "	50	180	260
5. Samba " "	40	160	300
6. Ragi (per bag of 100 kgs)	40	150	275
II. Agricultural by-products			
7. 1 bundle of hay	2.50	10.00	300
8. 1 bag of rice bran	15.00	40.00	166.66
9. 1 bag of groundnut cakes (50kgs)	75.00	200.00	166.66
III. Livestock			
10. 1 pair of bullocks (medium size)	1000.00	3000.00	200.00
11. 1 milch cow (of 1 litre yielding)	250.00	1000.00	300
12. 1 She-bullaloe "	400.00	1200.00	200
13. 1 He-buffaloe (medium size)	100.00	500.00	400
14. 1 goat or lamb (of 7 to 8 kgs weight)	150.00	400.00	166.66
15. 1 hen (1 kg weight)	5.00	25.00	400.00

Table 36 contd....

1	2	3	4
IV. Livestock products			
16. 1 litre of milk	1.00	3.00	200
17. 1 kg of mutton	12.00	30.00	150
18. 1 kg of fish	5.00	15.00	200
19. 1 dozen eggs	3.00	12.00	300
20. 1 kg of beef	2.00	8.00	300
21. 1 Bullock cart load of cowdung	5.00	12.00	140
V. Agricultural implements			
22. Wooden plough	30.00	70.00	133.33
23. Discplough	25.00	60.00	140
24. Crowbar	25.00	75.00	200
25. Spade	10.00	30.00	200
26. Sickle	2.00	9.00	350
27. Bullock cart	2000.00	8000.00	300
VI. Land			
28. 1 acre of wet land	3000.00	25000	733.33
29. 1 cent of house site	100.00	1000.00	900.00
VII. Consumer goods			
30. 1 kg of paddy	0.50	2.00	300
31. 1 kg of rice	1.00	4.00	300
32. 1 kg of ragi	0.70	3.00	328.57
33. 1 kg of pulses	2.00	10.00	400.00

Table 36 contd......

1	2	3	4
34. 1 kg of sugar	2.00	5.00	150
35. 1 kg of groundnut oil	5.00	20.00	300
36. 1 kg of coconut oil	8.00	40.00	400
37. 1 kg of tamarind	2.00	10.00	400
38. 1 kg of dry chillies	2.00	8.00	300
39. 1 kg of jaggery	2.00	5.00	150
40. 1 kg of gingelly oil	6.00	25.00	316.66
41. 1 kg of salt	0.20	0.60	200
42. 1 litre of liquor	10.00	30.00	200
43. 1 litre of toddy	0.50	3.00	500
44. 1 ton of firewood	100.00	300.00	200
45. 1 litre of kerosene	1.00	3.00	200
VIII. <u>Consumer services</u>			
46. Carpenter or blacksmith services for 1 H.H per year	24 kgs of paddy	48 kgs of paddy	100
47. Barber services for 1 H.H of 5 per year	24 kgs of paddy	36 kgs of paddy	50
48. Washerman's services for 1 H.H of 5 per year	36 kgs of paddy	48 kgs of paddy	33.33
49. Priest's services per H.H per year (in Rs.)	10.00	30.00	200

Table 36 shows that of all the prices in the village the prices of agricultural land and the house sites had gone up by about 700 to 900 percent even with in a period of 15years. While the price of agricultural products had increased by 250 to

300 per cent the agricultural by-products had increased by about 160 to 300 per cent between 1970-71 and 1985-86. The increases in the livestock prices were varying between 160 to 400 per cent. And the increases in the livestock product prices were varying less between 150 to 300 per cent. The price of a high value traditional agricultural implement such as bullock cart had registered a 300 per cent increase over the 1970-71 price. While the increases in the prices of consumer goods were varying very widely between 150 to 500 per cent the increases in the prices of consumer services were varying only between 50 to 200 per cent. However, among the consumer goods the prices of essential items such as paddy, rice, ragi, pulses, cooking oils and tamarind etc had gone up by about 300 to 400 per cent over the 1970-71 prices. And this magnitude of price rise of essential commodities could have only very much affected the levels of living of those categories of households who mostly bought the food in the village. And the changes in the price levels of agricultural assets were such that no category of H.Hs other than the big farmers could expect to buy and own them in the village.

16. Manures

Cowdung was the only source of domestic manure used in agriculture for a long time. Since this village had no forests and no private H.Hs had also owned any large number of trees the application of green manures was almost negligible. Prior to 1970-71 when only the traditional varieties of paddy were cultivated about 15 bullock cart-loads of cowdung was applied per acre per year. Each bullock cart load weighed around 400 kgs. Hence each farmer on an average used to apply about 6 tons of cowdung manures per acre per year. However, over the years with the

sharp reduction in the total number of animals owned in the village the application of cowdung manure per acre per year had also been reduced to about 10 bullock cart loads or to about 4 tons. Most of the farmers both in 1970-71 and 1985-86 applied these manures only for the rainy season crop raised in September. The price of 1 bullock cart load of cowdung had increased from Rs.5 in 1970-71 to Rs.12 in 1985-86. But even in the latter year the big farmers who were owning large number of animals had applied more than 10 bullock cart loads of cowdung per acre especially in September before transplanting the HYV paddy. However, with the increase in the application of cowdung manures per acre the farmers used to cut down their expenditures on the per acre application of chemical fertilizers.

17. The new growth linkages of agriculture

Prior to 1970-71 when paddy was cultivated on traditional pattern not many agricultural linkages were established between the village and the neighbouring town. The cultivators then were using largely the domestic manures and wooden agricultural implements manufactured and repaired by the village carpenters and blacksmiths. Since the total marketable surplus of agriculture was low the resident based merchants could themselves handle the marketing of agricultural produce in the village. The purchases of agricultural inputs such as chemical fertilizers and pesticides from the town was very much limited. Further, due to the absence of any mechanisation of agriculture the purchases of mechanical and electrical services from the town was almost absent. Again, the dependence on urban based credit institutions and agencies for carrying on the traditional pattern of cultivation was very minimum. However, the low level of cash incomes generated in agriculture then compelled the H.Hs to buy only the services provided by the resident artisanal and service H.Hs. Because

of all these the out flow of agricultural incomes from the village to the town was negligible. And the village economy prevailing then could be described as a closed economy for all practical purposes.

With the modernisation of agriculture in the serventies and the eighties the village became more an open economy with all the required linkages established between it and the neighbouring town. The cultivation of HYV paddy was based largely on the purchases of chemical fertilizers and pesticides from the town. The large scale mechanisation of agriculture required the purchases of mechanical and electrical services from the neighbouring town. The sharply increased marketable surplus of agriculture had thrown out the resident based merchants out of their profession and invited urban based merchants to market the agricultural produce of the village. The increased credit requirements of agriculture was also increasingly met by the urban based institutions and agencies. The urban manufactured agricultural implements had replaced the wooden implements previously manufactured by the resident carpenters and blacksmiths. With the increased cash incomes generated from agriculture more than half of the total H.Hs had stopped purchasing the services of resident dhobis and barbers in favour of purchasing the same from the town. In addition, the cultivation of HYV paddy based on large scale use of chemical fertilizers and pesticides had also increased the purchases of twon based health services by the H.Hs of the village during the recent years. Hence the modernisation of agriculture had resulted in the considerable outflow of agricultural incomes from this village to the neighbouring town of Gummidipundi. But the surplus incomes generated from agriculture had not yet been invested by any farmer in the purchases of any urban properties. However,

while a part of them was ploughed back in to agriculture the other part was spent for the unproductive activities such as the purchases of jewellery, conducting of social ceremonies and repairing of houses etc.

****

Chapter V

Non-agrarian Economy of the village

On the basis of our census data we have classified the village H.Hs and persons into 2 groups; in which for one group the participation in non-agricultural activities provided the major source of income and for the other group the participation in the same provided only the 'complementary source of income'. There were 18 H.Hs and 21 persons who belonged to the first group in 1985-86. For the same year the second group accounted for 24 H.Hs and 25 persons. Hence there were totally 42 H.Hs and 46 persons who were engaged in non-agricultural activities either full time or part-time in 1985-86. In the groupings of non-agricultural H.Hs and persons we had included all those H.Hs and person who derived their 'major source of income' from the government's social security scheme implemented in the village. There were 5 such H.Hs and persons in the village who depended entirely on this scheme for their livelihood.

Some of the major non-agricultural occupations in which the H.Hs and the persons of the village had participated in 1985-86 were the following: 1) trading in consumer and electrical goods, 2) providing casual labour to the industry in Gummidipundi 3) gardening 4) painting 5) money lending 6) business and 7) masonary. And out of 46 persons only 2 had reported as working on a regular salaried employment in the city of Madras. In the above said 7 occupations, the agricultural labourers and tenants who mostly belonged to the scheduled castes had provided only casual labour to the industry in Gummidipundi and to the gardening work in the city of Madras for a very short duration of 2 to 3 months in the whole year of 1985-86. The all other high income earning

major non-agricultural occupations were availed either in full or in part-time basis only by the upper caste H.Hs and persons of the village. But even among the upper caste H.Hs the occupation of dairying and livestock rearing as one of the major complementary sources of income had not received the attention of more than one H.H in the village.

Based on our census data we have worked out the incomes earned from each one of the non-agricultural occupations by each category of H.Hs in the village in 1985-86. Let us first see the incomes earned from each non-agricultural activity by the H.Hs. Table 37 provides the relevant information.

Table 37: Distribution of non-agricultural incomes by type of activity among the resident households in 1985-86

Type of non-agricultural activity	NO. of H.Hs parti-cipated	No. of persons parti-cipated	Total net income earned per year (in Rs)	As % age to the total
I. In full time activities				
1. Regular salaried employment	2	2	12,900.00	8.95
2. Widow relief pensions	5	5	4,200.00	2.91
3. Retirement pensions	1	1	6,000.00	4.16
4. Petty shops and big shops	5	5	27,600.00	19.14
5. Painting	1	1	6,000.00	4.16
6. Mason	3	3	10,800.00	7.49
7. Semi-permanent labourers in different non-agricultural activities	1	4	9,600.00	6.66
Sub-total	18	21	77,100.00	53.47
II. In part-time activities				
1. Business	2	2	17,000.00	11.79
2. Money lending	2	2	10,000.00	6.93
3. Part-time salaried employment	2	2	13,200.00	9.15
4. Dairying	1	1	7,200.00	4.99
5. As casual labourers in some non-agricultural occupations both within and outside the village	17	18	19,700.00	13.66
Sub-total	24	25	67,100.00	46.53
Grand total	42	46	1,44,200.00	100.00

Source: Our census survey data for 1985-86

Out of a total non-agricultural income of Rs.1,44,200.00 during 1985-86 about Rs.77,100.00 were earned by the full-time participant H.Hs and Rs.67,100.00 by the part-time participant H.Hs in the village. These respectively worked out to 53.47 and 46.53 per cent of the total non-agricultural incomes earned by the H.Hs in 1985-86. Of all the activities the full-time activity of shop keeping provided the highest proportion of total non-agricultural incomes earned by the H.Hs followed by the part-time activity of providing casual labour to different non-agricultural occupations. On an average the full-time participants earned Rs.4283 per H.H and Rs.3671 per person per year. The part-time participants on an average earned Rs.2795 per H.H and Rs.2684 per person in 1985-86.

Now let us see the distribution of total non-agricultural incomes among the different occupational categories of H.Hs in the village in 1985-86. Table 38 provides the relevant information. According to the table, excluding the non-agricultural labour category it was the big farmer's category which had earned the highest proportion of total non-agricultural incomes in 1985-86. Even including the non-agricultural labour category the per H.H income earned from non-agricultural occupations was the highest only in the big farmer category followed by the medium farmer category. In the whole of the village the per H.H income earned from non-agricultural occupations worked out to Rs.3433.33 in 1985-86. However, of all the major categories of H.Hs (excluding artisanal and service H.Hs) the tenants and agricultural labourers had earned the lowest average incomes per H.H from all non-agricultural occupations during 1985-86.

Table 38: Distribution of total non-agricultural incomes across different occupational categories of households in 1985-86

Occupational category of households	No.of H.Hs	No.of person	Net income earned per year (in Rs.)	As a % age to the total	Average income earned per H.H (in Rs)
1. Big farmers	2	2	22,000.00	15.26	11,000.00
2. Medium farmers	2	2	14,400.00	9.99	7,200.00
3. Small farmers	-	-	-	-	-
4. Marginal farmers	3	4	13,400.00	9.29	4,466.66
5. Tenants	3	3	3,600.00	2.50	1,200.00
6. Agricultural labourers	13	13	13,100.00	9.08	1,007.69
7. Non-agricultural labourers	18	21	77,100.00	53.47	4,283.33
8. Artisanal and service households	1	1	600.00	0.41	600.00
Total	42	46	1,44,200.00	100.00	3,433.33

Source: Our census survey data for 1985-86.

In the combind (agricultural and non-agricultural) total income of Rs.7,62,748.00 earned by all H.Hs in the village in 1985-86 the percentage of total non-agricultural income earned worked out to 18.90 per cent or little less than one-fifth of the total income. Thus, the agricultural sector of the village had a commanding position in terms of providing more than four-fifths of the total income of all the H.Hs in 1985-86.

Chapter VI

Implementation of Public Programmes and Utilisation of Common Property Resources

A: Implementation of public programmes

Compared to the other villages in the taluk Enathimelpakkam has had a fairly large number of public programmes implemented in it during the last 10 years. They were 1) provision of house sites and the construction of houses for the landless poor who mostly belonged to the scheduled castes; 2) Implementation of IRDP in which the major beneficiaries were drawn from the agricultural labour and tenant groups; 3) repairing and improvement of the existing tank with assistance (of Rs.18.18 lakhs) provided by the European Economic Community (E.E.C.) in 1985, 4) distribution of essential consumer items through a fair price shop; 5) Provision of drinking water facilities; 6) implementation of noon meal scheme; 7) setting-up of baby care and adult education centres ; 8) provision of cyclone relief and widow relief pensions; and 9) the creation of transport facilities to the village etc. And these programmes were implemented in addition to the agricultural development programmes already implemented in the village.

1. Housing

In the late 70s the government distributed 42 house sites of 3 cents each and constructed 35 dweling units in them at a total cost of around Rs.3,50,000. But this housing facility was provided to the poor who mainly belonged to the scheduled castes. Each dwelling unit was 19 feet in length and 18 feet in width with a total square feet of about 340. The market value of each dwelling unit in 1985 was estimated at Rs.35,000 in the village. Hence, the beneficiaries of this housing scheme greatly benefited from the appreciation in the values of these real

estate properties over the years. The other 7 S.C. H.Hs who were only given house sites were provided with a loan of Rs.5000 each for the construction of houses in the early 80s, by which time the cost of construction had almost doubled in the village. Hence these 7 H.Hs could only avail the loan but could not construct the houses for want of additional funds. However, the implementation of the housing scheme coupled with the development of agriculture increased the in-migration of S.C. H.Hs into the village in the late 70s. While the fathers-in-law had occupied the newly built pucca houses, the sons-in-law had occupied the old huts in the colony. Nearly 15 such H.Hs were said to have migrated into the colony during the period from 1975 to 1985.

2. Implementation of I.R.D.P

The government under its Integrated Rural Development Programme (I.R.D.P) had distributed about 25 pairs of bullocks, 5 bullock carts, 1 herd of sheep and 2 herds of ducks on loan cum subsidy basis to 28 H.Hs who mainly belonged to the scheduled castes in the village in 1981. None of the non-scheduled caste H.Hs had benefited from the implementation of this programme in the village. But within 2 years of its (I.R.D.P) implementation about 10 S.C. H.H beneficiaries had sold 7 pairs of bullocks, 1 herd of sheep and 2 herds of ducks, mainly for want of maintenance. But none of them had paid back the loan amounts due to the government. The remaining 18 S.C. H.Hs who were still owning the bullocks had leased-in and encroached some lands in the village for cultivation. This was resorted to mainly because there were not many hired employment opportunities available for bullocks especially after tractorisation of agriculture. Again, these 18 H.Hs have yet to pay their loan

amounts due to the governments.

3. Tank repair and improvement

The Public Works Department (P.W.D.) of the Government of Tamil Nadu had undertaken the scheme of repairing and improving the existing tank in the village in 1985 with the massive assistance of Rs.18.18 lakhs provided by the European Economic Community (E.E.C). Under this Programme the PWD had deepened the tank and strengthened the bunds with a vew to increasing the water storage capacity. It(P.W.D.) also built pucca field channels for 1 to 2 kilometres in the ayacut, mainly with the intention of economising the use of available irrigation water in the tank. But, the contractors of these works who were chosen mainly from outside the village, brought their own labourers for work. This resulted in not providing many jobs to the resident labourers. At best about 10 labourers of the village had worked for about 10 days in the deepening of the tank. Thus, the major programme benefited the non-resident contractors and labourers more than the resident contractors and labourers. However, after the implementation of this programme, the water storage capacity of the tank was expected to have gone up by a little less than one-fourth of the total previous capacity. Some of the knowledgeable people in the village estimated the actual spending of only half of the total amount (Rs.18.18 lakhs) allotted for this purpose, with the other half being taken away by all those who were actually in charge of implementing this programme.

4. The functioning of the Public Distribution System (P.D.S)

Since we have collected the data on the purchases of different consumer items by every H.H from the fair price shop located in the village, it is possible for us to present the

data for different occupational and caste groups of H.Hs relating to the year 1985-86. Rice, sugar and kerosene were the major items distributed by the P.D.S. in 1985-86. The other items like Rava, maida and wheat were distributed only occasionally. The category-wise purchases of different items per month are given in table 39.

Table 39: Category - wise purchases of different items per month from PDS

Category	No.of H.Hs	Population	Rice (in kgs) T.Q	Rice A.V per H.H	Rice per capita per month	Sugar (in kgs) T.Q	Sugar A.V. per H.H	Sugar per capita per month	Kerosene (in litres) T.Q	Kerosene A.V. per H.H	Kerosene per capita per month
1. Big farmers	7	67	-	-	-	52	7.43	0.78	43	6.14	0.64
2. Medium farmers	4	27	-	-	-	17	4.25	0.63	18	4.50	0.67
3. Small farmers	6	42	-	-	-	17	2.83	0.40	20	3.33	0.48
4. Marginal farmers	14	69	22	1.57	0.32	31	2.21	0.45	40	2.86	0.58
5. Tenants	18	73	64	3.55	0.88	24	1.33	0.33	52	2.89	0.71
6. Agricultural labourers	36	130	140	3.89	1.07	25	0.69	0.19	81	2.25	0.62
7. Non-agricultural labourers	18	66	38	2.11	0.57	25	1.39	0.38	39	2.17	0.59
8. Artisanal and service households	3	12	9	3.00	0.75	6	2.00	0.50	11	3.66	0.92
Total	106	486	273	2.57	0.56	197	1.89	0.41	304	2.87	0.62

Source: Our census survey data for 1985-86

The data in table 39 shows that in any given month of 1985-86 about 273 kgs of rice, 197 kgs of sugar and 304 litres of kerosene were bought by the H.Hs of the village at subsidised prices. While the total quantities of rice and kerosene bought were higher in the case of agricultural labourers the total quantity of sugar bought was higher in the case of big farmers. But if we take the average H.H purchases of different items then the picture becomes different. While the agricultural labourers bought more of rice per H.H the big farmers bought more of sugar and kerosene in comparison to all other categories of H.Hs in the village. However, on an average a H.H in this village purchased 2.57 kgs of sugar and 2.87 litres of kerosene per month. Now let us put our figures given in the table above against the prescriptions of P.D.S. in 1985. While the PDS had allotted 12 kgs of rice per H.H per month, the actual distribution in the village worked out to just 2.57 kgs of rice per H.H per month. The offtake of sugar from P.D.S. worked out to 410 grams per capita per month as against the allotted quantity of 450 grams per capita per month. The purchases of kerosene at 2.87 litres per H.H per month exceeded the allotted quantity of 2 litres per H.H per month. However, the big and medium farmers' purchases of sugar and kerosene far exceeded the prescribed quantites of the same by the PDS in 1985-86. The very low offtake of rice from the PDS had been attributed to the low quality rather than to the lack of demand in the village. Because of this, the person in-charge of the fair price shop in the village had either refused to take the allotted supply of rice to the village from the taluk civil supplies department or sold the same to the merchants of the town at marginally higher prices. The difference between the allotted and purchased quantities of sugar arose mainly because the person in-charge of the fair price shop could not refuse the requests of some big and rich farmers for huge quantites of sugar when social ceremonies were conducted in their H.Hs. Every month

he had to meet 2 or 3 such requests and hence one could observe some shortfalls in the distribution of sugar in the village in relation to the total allotment.

Almost all the H.Hs in the village were distributed with P.D.S. ration cards. And none of the H.Hs had sold out their cards to others. At best they used to exchange these cards between themselves depending on the individual H.Hs requirements of each commodity. One of the big farmers of the village had provided accommodation for the setting-up of the fair price shop in the village. The person ir charge of running the fair pirce shop belonged to one of the upper castes of the neighbouring village. These factors had their own implications in the distribution of major items among the different caste-groups of H.Hs in the village.

Table 40 provides the information on the caste-wise purchases of different items per month from the fair price shop in the village. According to the table while

Table 40: Caste-wise purchases of different items per month in 1985-86

Caste-group	No. of H.Hs	Population	Rice (in kgs)			Sugar (in kgs)			Kerosene (in lts)		
			T.Q. (in kgs)	A.V. per H.H	per capita	T.Q. in (kgs)	A.V. per H.H	per capita	T.Q (in litres)	A.V. per H.H	per capita
1. Mudaliars	22	119	23	1.04	0.19	91	4.14	0.76	96	4.36	0.81
2. Chettiars	16	98	38	2.37	0.39	38	2.37	0.39	49	3.06	0.50
3. Pillai	2	11	-	-	-	5	2.50	0.45	5	2.50	0.45
4. Devar	1	5	-	-	-	3	3.00	0.60	3	3.00	0.60
5. Naidu	1	3	2	2.00	0.67	2	2.00	0.67		2.00	0.67
6 Gownder	2	2	5	2.50	2.50	2	1.00	1.00	5	2.50	2.50
7. Brahmin	1	4	2	2.00	0.50	2	2.00	0.50	2	2.00	0.50
8. Achari	3	18	5	1.67	0.28	10	3.33	0.56	13	4.33	0.72
9. Barber	1	3	2	2.00	0.67	1	1.00	0.33	2	2.00	0.67
10. Scheduled castes	57	223	196	3.44	0.88	43	0.75	0.19	127	2.23	0.57
Total	106	486	273	2.57	0.56	197	1.86	0.40	304	2.87	0.62

Column group heading: Quantites of different items purchased

Source: Our census survey data for 1985-86

scheduled castes bought more of rice per H.H Mudaliars bought more of sugar and kerosene per H.H per month compared to any other caste-group. However, no person in the village made any adverse comments on the functioning of PDS in the village.

5. Provision of drinking water facilities

In all there were 2 surface wells, 3 handpumps and one borewell to supply drinking water for the village in 1985-86. The 3 hand pumps and one borewell were sunk only in the mid-80s. The bore well was sunk only in the colony to provide it with the drinking water supply through the tap system. Such facility was not provided to the caste H.Hs in the village. Hence, they had to fetch water from the surface wells and hand-pumps. The colony was also provided with an overhead tank constructed near the borewell. The cost of this drinking water system provided only to the colony was estimated to be around Rs.50,000. This whole system was operated by a person drawn from the scheduled castes who was paid about Rs.100 per month by the village panchayat.

6. Implementation of noon-meal scheme

The noon-meal scheme implemented in the village from the early 80s was supposed to feed 100 school children, 20 babies and 5 widows with one meal a day. Initially, the cooking centre was located in the caste locality and both the scheduled caste and non-scheduled caste children were provided with food together. But this was objected to by the caste people on the ground that the children of the upper castes could not take meals alongwith the scheduled caste children. Then a separate noon-meal centre was established in the colony with a scheduled caste cook for the benefit of the children of these castes. Even then it was said that most of the non-scheduled castes children were not allowed to take these meals by their

parents on the ground of low quality. If they took food from the centre they used to throw away the foods to some animals. However, the implementation of the noon-meal scheme in the village had provided employment to 2 woman cooks who were each paid about Rs.50 per month. But they were said to be taking their own meals and extra food to their houses to feed other members of their families. If this benefit were not there it would be uneconomical for them to work for a very low wage payment of Rs.50 per month.

7. Setting-up of baby care and adult education centres

In the mid-80s both the baby care and adult education centres were opened in the scheduled caste colony of the village. There were no separate centres set-up for the benefit of caste H.Hs in their localities. Some 20 babies were taken care of with food and other things in the centre called Balvadi. One ayah was appointed to take care of the centre at a monthly salary of Rs.75. The adult education centre was run by a scheduled caste teacher with a strength of about 20 adults drawn mainly from the colony. The Adult Education teacher was also paid Rs.75 per month. The ayah in-charge of the Balvadi (baby care centre) was also drawn from the scheduled caste group of the village.

8. Provision of cyclone relief and widow relief pensions

Subsequent to the 1983 cyclone, 27 H.Hs were helped each with Rs.300 worth of cash, clothes, rice and kerosene. Out of the 27 H.Hs, while 16 belonged to the scheduled castes the other 11 belonged to the non-scheduled castes. But our field enquiries revealed that the actual amounts disbursed by the government agencies varied from a minimum of Rs.150 to Rs.250. No one was provided with the full relief amount of Rs.300, either in cash or in kind.

Under the widow relief scheme, regular pensions were provided to 5 women of the village from 1980 onwards. Under this pension scheme, each one of the beneficiaries was provided with Rs.35 and 2 kgs of rice per month and 2 sets of clothes a year. Besides, each widow was provided with one meal a day from the noon-meal centres of the village.

9. Creation of transport facilities

In the sixties only a kutcha road was linking the village with the town of Gummidipundi. By the mid-seventies a metal road was laid to the village. No bus facility was provided to the village till 1986. Only in 1987 the village was provided with a bus facility connecting it with 2 of the neighbouring towns in Chingleput district. But the use of tractors and trucks by the big farmers of the village even before the bus was allowed to ply, had greatly damaged the already laid metal road.

II. Utilisation of common property resources

The village had only one tank, 2 ponds and 5 tarmarind trees to boast of as its common property resources. The village had no poromboke land which could meet the fuel and grazing needs of its H.Hs. But it had 2 separate burial grounds meant each for caste and scheduled caste groups. No grain threshing floors were owned in common; instead these were owned by private individual H.Hs. The fuel and grazing needs of this village was met by the large uncultivated area available in the foreshore of the tank of a neighbouring village. Scheduled caste H.Hs of the Enathimelpakkam Village had also encroached about 60 acres of this land, details of which we have already discussed.

As far as the tank and ponds were concerned, the village panchayat used to auction their fish resources every year for amounts ranging from Rs.3000 to Rs.4000. These amounts were supposed to be spent on the maintenance and up-keep of the 3 temples in the village. These were in addition to the celebration of festivals to the deities of these temples every year. Half of the incomes earned from fish auctions were also given to scheduled caste panchayat members to undertake the above said tasks. But for the last 4 years, no cultural or social festivals were conducted at the 3 temples of the village. One of the temples which was badly damaged during the last 1983 cyclone was not repaired till 1986. And these were stopped for years despite the accumulation of incomes from the fish auctions in the hands of both the scheduled and the non-scheduled castes leaders in the village. The fruits of 5 tamarind trees available on the tank bund were auctioned for about Rs.1000 every year. But these incomes were also in the hands of the big farmers of the village who again were expected to spend them on the above said functions. However, the suspension of all cultural programmes to the temples of the village, not only locked up the continously increasing incomes provided by the common property resources in a few hands without any accountability, but had also affected the economic conditions of the artisanal and service H.Hs who used to greatly benefit from the social and cultural festivals commonly conducted in the village.

Chapter VII

Poverty and Income Distribution

1. Poverty

The analysis of poverty and income distribution is mainly based on a random sample survey of 66 households in the village in 1985-86. The sample H.Hs constituted about 62 per cent of the total H.Hs (106). For the calculations on poverty and income distribution, we have used the actual income data collected from the H.Hs for the agricultural year of 1985-86. The use of income data rather than the consumption data was found to be more appropriate for the micro level analysis of poverty and income distribution. This is mainly due to the fact that at the micro level of a village, the consumption data are very much influenced by the seasonal factors of agriculture. And the same get cancelled out when one uses the consumption data at a macro level, because agricultural seasons vary from region to region. Hence, we had collected the data on net total incomes earned by the H.Hs from different sources during 1985-86.

As far as the methodology adopted for the calculations of poverty is concerned, we have used the poverty line expenditure of Rs.15 per capita per month at 1960-61 prices. In order to get the per capita poverty line income for the agricultural year of 1985-86 we have deflated the initial poverty line by the Consumer Price Index for Agricultural Labourers (C.P.I.A.L.) relating to Tamil Nadu. The CPIAL for 1985-86 stood at 537 points with 1960-61 as the base (base=100)[19]. Deflating the initial poverty line by CPIAL for the year 1985-86 we get the poverty

line incomes of Rs.80.55 per capita per month and Rs.966.60 per capita per year. While we have used the poverty line income of Rs.966.60 per capita per year for arriving at the level of "absolute" poverty we have taken half of this poverty line income of Rs.483.30 for the calculations of "abject" poverty level in the village. For the calculations of "relative" poverty, we have used the village annual average per capita income of Rs.2666.31 for 1985-86. In addition, we have also calculated the Sen Index or the intensity of poverty based on the Gini Coefficient of income concentration among the poor and their proportionate income gap and head-count ratio of poverty.[20] Further, we have also compared our village level poverty figures obtained for the year 1985-86 with that of the state level figures available for the year 1983.[21]

Now let us move on to the analysis of poverty in the village in 1985-86. Table 41 provides information

on different levels of poverty prevailing in the

Table 41: Different levels of poverty prevailing in the village in 1985-86

Category of households	No. of sample H.Hs	No. of persons	Absolute poverty		Relative poverty		Abject Poverty	
			No. of H.Hs	Persons	No. of H.Hs	Per sons	No. of H.Hs	Persons
1. Big farmers	6	50	-	-	-	-	-	-
2. Medium farmers	4	27	-	-	-	-	-	-
3. Small farmers	4	34	2	18	3	29	-	-
4. Marginal farmers	5	32	4	27	5	32	-	-
5. Tenants	12	45	6	24	12	45	1	6
6. Agricultural-labourers	25	83	12	50	25	83	3	13
7. Non-Agricultural labourers.	7	26	3	8	5	18	-	-
8. Artisanal and service H.Hs	3	15	2	12	3	15	-	-
Total	66	312	29	139	53	222	4	19

Source: Computations are based on our random sample survey data for 1985-86.

village. According to the table, 29 out of 66 H.Hs and 139 persons out of 312 were in "absolute" poverty in the village in 1985-86. These worked out to about 44 per cent of the total sample H.Hs and 44.55 per cent of the total sample population in the village. The proportion of population living in "absolute" poverty at the village level in 1985-86 was somewhat higher compared to the State level figure of 39.94 per cent for the year 1983. As far as "relative" poverty of the village was concerned it was much higher than the "absolute" poverty prevailing in it. Out of 66 sample H.Hs 53 H.Hs and 222 out of 312 sample population were living in "relative" poverty in 1985-86. These worked out to 80.30 per cent of the total sample H.Hs and 71.15 per cent of the sample population in the village. However, the "relative" poverty in the village was also much higher compared to the state level figure of 64.91 per cent obtained for the year 1983. The "abject" poverty in the village had worked out to 6.06 per cent of the total sampled H.Hs and 6.08 per cent of the total sample population. Here again, the proportion of total sample population living in "abject" poverty at the village level was higher than the state level figure of 4.42 per cent for the year 1983. The intensity of poverty in the village had worked out to 0.2020 (Sen's Index). This was considerably higher than the state level figure of 0.1476 (Sen's Index) for the year 1983. Thus, the different levels of poverty prevailing in Enathimelpakkam in 1985-86 were all higher compared to the state in which it was located.

Now let us see the prevalence of poverty according to occupation in the village in 1985-86. Table 42 provides the relevant information.

Table 42: Occupational profile of poverty in the village in 1985.86

Occupational group	No. of sample H.Hs	No. of H.Hs in poverty	%age of group's total H.Hs in poverty	As % to total sample H.Hs in poverty	Total sample population	No. of sample persons in poverty	%age of group's sample population in poverty	As % age to total sample population in poverty
1. Cultivating households (small & marginal farmers & tenants)	21	12	57.14	41.38	111	69	62.16	49.64
2. Pure Agricultural labourers	25	12	48.00	41.38	83	50	60.24	35.97
Total for Agricultural categories	46	24	52.17	82.76	194	119	61.34	85.61
3. Non-Agricultural labourers	7	3	42.86	10.34	26	8	30.77	5.76
4. Artisanal and service households	3	2	66.67	6.94	15	12	80.00	8.63
Total for non-agricultural categories	10	5	50.00	17.24	41	20	48.78	14.39
Grand total (excluding the sample big and medium farmers who were not in poverty.	56	29	51.78	100.00	235	139	59.15	100.00

Source : Computations are based on random sample survey data for 1985-86.

In the total population living below the poverty line the agricultural population accounted for 85.61 per cent and the non-agricultural population accounted for 14.39 per cent. Among the 4 broad occupational groups of H.Hs it was only the non-agricultural groups which had the highest and lowest proportions of their respective total populations living below the poverty line in 1985-86. The table also shows that 62.16 per cent of sample cultivating persons and 60.24 per cent of pure sample agricultural labourers were living in poverty in the same year. Thus the head-count ratio of poverty among the two agricultural groups were more or less equal. While the cultivators contribution worked out to a little less than half the contribution of agricultural labourersworked out to a little more than one-third of the total population living below the poverty line in 1985-86.

2. Income Distribution

We have clubbed both the agricultural and non-agricultural incomes for working out the distribution of total incomes according to occupational and income size groups. First, let us see the distribution of total income among the different occupational categories of H.Hs in 1985-86. The data in table

Table 43: Occupation-wise distribution of total incomes of the village in 1985-86

Occupational category	No. of sample H.Hs.	% of sample H.Hs.	Cumulative percentage of H.Hs.	Total income (in Rs.)	As %age to the total income of the village	Cumulative %age of income
1. Big farmers	6	9.09	9.09	4,71,119.35	56.63	56.63
2. Medium farmers	4	6.06	15.15	1,16,249.65	13.97	70.60
3. Small farmers	4	6.06	21.21	40,054.00	4.81	75.41
4. Marginal farmers	5	7.57	28.78	23,744.96	2.85	78.26
5. Tenants	12	18.18	46.96	43,186.37	5.19	83.45
6. Agricultural labourers	25	37.88	84.84	79,286.00	9.53	92.98
7. Non-Agricultural labourers	7	10.61	95.45	45,319.86	55.45	98.43
8. Artisonal and service house holds	3	4.55	100.00	12,930.00	1.55	99.98
Total	66	100.00	-	8,31,890.19	100.00	-

Source: Our random sample survey data for 1985-86

43 show that while the big farmers who accounted for only 9 per cent of the total sample H.Hs had earned 56.63 per cent of the total income the all other 7 categories of H.Hs who accounted for 91 per cent had earned only 43.37 per cent of the total income in the village in 1985-86. The agricultural labourers who accounted for more than one-third of the total sample H.Hs had earned only less than 10 per cent of the total income. The 4 other categories of H.Hs who put to gether accounted for more than two-thirds (69.69 per cent) of the total sample H.Hs had earned only less than one-fourth (22.38 percent) of the total income in the village in 1985-86. With this background information let us move on to the analysis of income distribution among the different income classes of the village. Table 44 provides the relevant data.

Table 44: Size distribution of total income in the village in 1985-86

Size of Income in (Rs)	No. of H.Hs	%age of total H.Hs	Cumulative % age of H.Hs	Total Income (in Rs.)	As % age of total income	Cumulative % age of Income
1. 1 - 5000	39	59.09	59.09	1,12,707.17	13.55	13.55
2. 5001 - 10000	14	21.21	80.30	87,759.99	10.55	24.10
3. 10001 - 15000	3	4.54	84.84	39,824.87	4.79	28.89
4. 15001 - 20000	2	3.03	87.87	33,233.30	3.99	32.88
5. 20001 - 25000	-	-	-	-	-	-
6. 25001 - 30000	1	1.51	89.38	28,691.79	3.45	36.63
7. 30001 - 40000	1	1.51	90.89	37,652.48	4.53	40.86
8. 40001 - 50000	1	1.51	92.40	49,592.50	5.96	46.82
9. 50001 - 60000	1	1.51	93.91	57,827.53	6.95	53.77
10. 60001 - 70000	2	3.03	96.94	1,37,282.30	16.50	70.27
11. 70001 - 80000	-	-	-	-	-	-
12. 80001 - 90000	-	-	-	-	-	-
13. 90001 - 100000	-	-	-	-	-	-
14. 100001- 110000	-	-	-	-	-	-
15. 110001- 120000	1	1.51	98.45	1,11,707.26	13.43	83.70
16. 120001- 130000	-	-	-	-	-	-
17. 130001- 140000	1	1.51	99.96	1,35,611.00	16.30	100.00
18. 140001- 150000	-	-	-	-	-	-
Total	66	100.00	-	8,31,890.19	100.00	-

Source: Our random sample survey data for 1985-86.

The table above reveals the extreme concentration of incomes in a few size classes in 1985-86. The Gini coefficient worked out for the concentration of incomes was 0.6579. However, reading the data in table 44 it is a pity to note that while 4 lower income size classes which accounted for about 88 per cent of the total H.Hs had incomes less than even one-third of the total incomes generated, the remaining 12 per cent of the total H.Hs had incomes more than two-thirds of the total income of the village in 1985-86. It is also very depressing to note that the lowest income size class (which accounted for about 60 per cent of the total H.Hs) had a total income which was less than the income of a single household in the highest income bracket. Thus, Enathimelpakkam as a highly developed agricultural village, had not only experienced higher levels of poverty but also suffered from the high concentration of incomes in a few hands in 1985-86.

3. Savings and indebtedness

The examination of savings and debt positions of the H.Hs may also indicate the economic status of different occupational groups in 1985-86. A priori, one may expect savings to be more associated with the higher income groups and debts to be more associated with the lower income groups. First let us see the savings position of different H.Hs in the village.

As per our field enquiries none of the H.Hs in the village had saved any money with any financial institutions. Only 3 H.Hs in the village had a total savings of about Rs.50,000 in cash which they were lendings privately at high interest rates to the other H.Hs with in the village. The other big and rich farmer H.Hs of the village did not prefer cash savings; instead they prefered the real savings to be accumulated in forms of both productive and un productive assets such as land and

jewellery. Now let us move on to the analysis of category-wise distribution of total debts in the village in 1985-86. Table 45 provides the information on the purposes of borrowing by different categories of households in the village in 1985-86.

Table 45: Purposes of borrowing by different Categories of households in the village in 1985-86.

(All in Rs.)

Occupational Category	No.of sample H.Hs	No.of H.Hs in debt	Purpose of Borrowing Pro-ductive	Un pro-ductive	Total Debt
1. Big farmers	6	5	2,43,000	-	2,43,000 (52.57)
2. Medium farmers	4	-	-	-	-
3. Small farmers	4	4	26,000	26,000	52,000 (11.25)
4. Marginal farmers	5	5	7,100	24,500	31,600 (6.84)
5. Tenants	12	12	17,000	28,250	45,250 (9.79)
6. Agricultural labourers	25	23	23,700	45,565	69,265 (14.98)
7. Non-Agricultu-ral labourers	7	4	13,300	6,300	19,600 (4.24)
8. Artisonal and service house holds	3	2	-	1,500	1,500 (0.32)
Total	66	55	3,30,100	1,32,115	4,62,215

Note: Figures in brackets are percentages to the total debts.

Source: Our random sample survey data for 1985-86.

According to the table out of a total debt of Rs.4.62, 215 productive debts accounted for Rs.3,30,100 and unproductive debts accounted for the rest of Rs.1,32,115 in 1985-86. Thus, in the total debt while the productive debts accounted for 71.40 per cent the unproductive debts accounted for 28.56 per cent. And this shows that only a little more than one-fourth of the total loan amount was borrowed for unproductive purposes by the sample H.Hs in the village in 1985-86. The table also shows that out of all the occupational categories of H.Hs the H.Hs belonging to the medium farmer's group were totally debt free in 1985-86. However, out of a total borrowing of Rs.4,62,215 the big farmer's group alone had accounted for more than half of it. Again, it is also interesting to note that the big farmer's had borrowed more for productive purposes rather than for unproductive purposes. The table also needs some clarifications regarding the productive amounts borrowed by the tenants and agricultural labourers who did not own any large areas for cultivation. These productive debts were mainly provided to the two groups by the government under its IRDP for the purchase of bullocks and bullock carts in the early 1980's.

Now let us move on to the examination of the sources of borrowing by the sample H.Hs in the village in 1985-86. Table 46 provides the related information.

Table 46: Sources of borrowing by different categories of households in the village in 1985-86

(All in Rs.)

Occupational Category	Sources of borrowing: Govern-ment	Money-lenders	Land Lords	Others (includ-ing rela-tives and friends)	Total loan amount borrowed
1. Big farmers	2,08,000 (85.60)	15,000 (6.17)	---	20,000 (8.23)	2,43,000
2. Medium farmers	--	--	---	--	--
3. Small farmers	27,000 (51.92)	18,000 (34.62)	---	7,000 (13.46)	52,000
4. Marginal farmers	7,000 (22.15)	16,600 (52.53)	2,000 (6.33)	6,000 (18.99)	31,600
5. Tenants	15,000 (33.15)	17,300 (38.23)	9,000 (19.89)	3,950 (8.73)	45,250
6. Agricultural labourers	21,400 (30.90)	39,205 (56.60)	2,760 (3.98)	5,900 (8.52)	69,265
7. Non-Agricul-tural labourers	16,100 (82.14)	1,000 (5.10)	--- ---	2,500 (12.76)	19,600
8. Artisanal and service house-holds	---	1,500 (100.00)	---	--	1,500
9. Total	2,94,500	1,08,605	13,760	45,350	4,62,215
10. As percentage of the total loan amount borrowed	(63.71)	(23.50)	(2.98)	(9.81)	(100.00)

Note: Figures in brackets are percentages to the respective group's totals.

Source: Our random sample survey data for 1985-86.

The table shows that the largest proportion of the total loan amount was provided by the government at low interest rates. This source accounted for almost two-thirds of the total loan amount borrowed by the sample H.Hs. Another major source of credit was the high interest rate charging professional money lenders. Landlords accounted for a very negligible proportion of about 3 per cent of the total credit provided to the sample H.Hs. But this group became one of the major creditors of tenants in the village. The high interest rate charging money lenders had provided about 24 percent of the total loan amount borrowed by the sample H.Hs in the village. However, the big farmers had emerged as the major beneficiaries of low and moderate interest rates charging 'government' and 'others' sources. The agricultural labourers ended up by being the major debtors of high interest rates charging professional money lenders. It is also interesting to note that one of the most poor groups of H.Hs namely the artisanal and service households had borrowed the least compared to any other group.

Having analysed the total debt position of each occupational category according to their sources and purposes of borrowing let us now examine the average debt position of H.Hs within each category. Table 47 provides the relevant information. According to the

Table 47: Average household debt position of different occupational groups in 1985-86

All in Rs.

Occupational group	No. of sample H.Hs	A.V. Debt per H.H.		A.V. Total debt per H.H.
		Pro-ductive	Un-pro-ductive	
1. Big farmers	6	40,500	-	40,500
2. Medium farmers	4	-	-	-
3. Small farmers	4	6,500	6,500	13,000
4. Marginal farmers	5	1,420	4,900	6,320
5. Tenants	12	1,417	2,354	3,771
6. Agricultural labourers	25	948	1,822	2,770
7. Non-Agricultural labourers	7	1,900	900	2,800
8. Artisanal and service households	3	-	500	500
Total	66	5,001	2,002	7,003

Source: Our random sample survey data for 1985-86.

table the total average debt per H.H in the village was Rs.7003 in 1985-86. In the total average debt per H.H about Rs.5000 was borrowed for productive purposes and the rest of about Rs.2000 was borrowed for unproductive purposes. It was also observed that while the big and medium farmers of the village did not borrow any monies for unproductive purposes all other groups of the H.Hs had borrowed some amounts for unproductive purposes. Again, whereas the small farmers of the village had borrowed equal amounts for both productive and unproductive purposes the marginal farmers, tenants and agricultural labourers had borrowed bigger amounts for unproductive purposes compared to their productive loans. The table also shows that while the non-agricultural labour H.Hs had borrowed more for productive purposes the artisanal and service H.Hs had borrowed only for unproductive purposes.

In our random sample survey we also tried to collect the data on the amounts of debts inherited by the present sample H.Hs in the village. It was revealed that out of 66 sample H.Hs only 5 had inherited a total debt of about Rs.15000/- The total inherited debt worked out to only 3 percent of the total current debts of the H.Hs. However, with the transformation of traditional agriculture the amounts borrowed for both productive and unproductive purposes by the present sample H.Hs had gone up by manyfold even in real terms compared to the amounts borrowed by their respective parent H.Hs especially in the late 60s. In addition, we had also collected the data on the assets lost by the present sample H.Hs while repaying either the old debts or the new debts incured by them especially during the last 15 years (1970-71 to 1985-86) The survey revealed that so far 1 small farmer and 3 agricultural labourers had totally lost about 5 acreas of land and 12 soverigns (96 grams) of gold to their respective creditors during the last 15 years.[22] It is also worth pointing out that about 100 acres of land belonging to the residents originally had been bought by the non-residents mostly by providing consumption loans to small farmers and agricultural labourers in the 1960s.

Chapter VIII

The Changing Socio-Economic Scene of the Village and Conclusions

I : Enathimelpakkam, for decades, had been dominated by a higher proportion of scheduled caste population in its total population. While the out migration of H.Hs was negligible the immigration of H.Hs was considerable, especially into the scheduled caste group. But the rate of growth of population in the village even over a period of 3 decades was low compared to the taluk or the district in which it was located. The average family sizes of almost all categories of H.Hs with the exception of big farmers were low at around 4.5. Further, the earner-dependent ratios were also lower among different categories of H.Hs. On the whole, the village did not suffer from high a) rates of growth of population, b) average family sizes, and c) earner-dependent ratios. However, the sex-ratios varied very widely between the scheduled caste and the non-scheduled castes populations in the village. While the sex-ratio was very favourable among the scheduled castes population the same was very unfavourable among the non-scheduled castes population in the village. Over the years the village had achieved very high levels of literacy which compared very favourably with Gummidipundi taluk.

As far as the workforce and the occupational structure of the village were concerned it was observed that about 85 per cent of the total working population was dependent on agriculture in 1985-86. And only the remaining 15 percent of the total working population was dependent on the non-agricultural activities of the village. Compared to the taluk, the village had a higher proportion of total working population depending on agriculture and a lower proportion depending on non-agricultural activities in 1985-86. During the period from 1970-71 to 1985-86, altogether a total of 18 H.Hs had changed their occupations but these changes took place mainly among and between the different agricultural occupations (from agricultural labour to cultivators) rather than between the agricultural and the non-agricultural occupations.

II. Over the years the non-residents came to own a little less than half of the total cultivated land in the village. They bought most of the lands owned previously by the resident Chettiars at throw away prices in the sixties. Among the different resident caste groups of H.Hs while most of the Chettiars had lost their lands, and became small and marginal farmers, Mudaliars had accumulated most of those lands and became medium and big farmers in the village. The proportion of landless H.Hs to the total number of H.Hs had gone up over the years; similarly, the area under illegal occupation (encroachments) of the same group had also gone up during the same period. Again, while the area under tenancy had declined, the [illegible] of tenants in the village had considerably increased over the years. The major beneficiaries of changes in tenancy were the former agricultural labourers who subsequently became tenants in the village. The reduction in the area under tenancy was brought about by the evictions of small and marginal farmers who mostly belonged to the caste of Chettiars. However, over the years the relatively poor groups of H.Hs' (such as agricultural labourers and tenants) accessibility to the total of owned, tenant and encroached lands in the village had gone up considerably.

Between the mid-seventies and the mid-eighties there was a sharp reduction in the total number of adult animals owned in the village. While the number of draught animals had declined, the number of milch animals, sheep and goats had considerably increased over the years. However, the reduction in the total number of milch animals, sheep and goats had considerably increased over the years. However, the reduction in the total number of adult animals owned in the village could have been even sharper, but for the distribution of about 40 bullocks by the government under I.R.D.P. in the early eighties.

There had also been a considerable shift both in the ownership and use of different types of agricultural implements by the H.Hs, especially between the mid-seventies and the mid-

eighties. During this period, the wooden agricultural implements had been replaced by the iron and urban manufactured implements. The same period had also witnessed sharp increases in the ownership of very high value macnanical implements by some categories of H.Hs in the village.

III. In the seventies, the village had witnessed rapid transformation of its traditional agriculture by a modern one with all its associated complementarities. Over the years the village came to have a monocropped cultivation of HYV paddy based on transplanting. Agriculture by the mid-eighties had become fully mechanised. The kind wage payment system was replaced by the cash wage payment system in agriculture. Not even the harvest wages were paid in kind especially after the modernisation of agriculture in the village. The productivity of HYV paddy had gone up by one one-fifth compared to the traditional paddy. But the production had more than doubled, thanks to the increased intensity of cultivation in the Seventies and in the eighties. But the distribution of total agricultural produce in the case of some production and consumption items had worsened in the mid-eighties compared to the early seventies. Consequently, the net total marketable surplus of agriculture had gone up thrice within a period of one and a half decades of agricultural modernisation. However, a few big farmers of the village had accounted for about half of the total production, three-fourths of the total net marketable surplus and two-thirds of the total net income generated in agriculture in the mid-eighties. Consequently, the agricultural incomes came to be highly concentrated among a few big farmers of the village in 1985-86. The mechanisation of agriculture, especially by a few big farmers had not only helped them to economically gain more by way of appreciation in the values of high-cost assets, but also by hiring-out the agricultural machinery both within and outside the village. As far as agricultural credit was concerned, while government sources had largely financed the agricultural mechanisation processes, non-governmental sources

had largely financed the crop production in the village. Again, while the low interest rate charging government and 'others' (relatives and friends) became the major creditors of the big and rich farmers in the village, the high interest rate charging professional money-lenders and landlords became the major creditors of small and marginal farmers, tenants and agricultural labourers. The commercialisation and the enormous increases in the net marketable surplus of agriculture had thrown out the village-based paddy merchants out of their profession and brought in the non-resident merchants to do the same. Again, compared to the early 70's the mid-eighties had also witnessed the development of new growth linkages between agricultural and non-agricultural sectors (mainly the twon based activities) of the economy. Consequently, there had been a considerable outflow of agricultural incomes from the village during the recent years. Hence, over the years the village became more and more open to the activities of the outside world.

The modernisation of agriculture while increasing the use of casual hired labour sharply reduced the use of permanant farm servants and cowherds in the village. Even among the hired casual labourers females were increasingly employed compared to the males in agriculture. The increased intensity of cropping also led to increased labour supply from the neighbouring villages. However, while employment in agriculture had gone up sharply, the real wage rates paid to different categories of agricultural labourers had gone up only slightly. The switch over from the use of wooden agricultural implements to the urban manufactured iron implements had sharply reduced the employment of village-based artisans.

While the costs incurred on the per acre cultivation of HYV paddy did not vary very much the returns varied very widely between the different categories of agricultural H.Hs in the village in 1985-86. The wide variation observed in the per acre returns was also reflected in the net total incomes earned from

agriculture by different categories of H.Hs. As far as the small sized farms were concerned there could hardly be any increases in the real net incomes earned from an acre of paddy cultivation between 1970-71 and 1985-86. Over the years, the rent paid per acre had almost doubled. But the lands continued to be leased-in only on "Kuttagai" (fixed rent) basis. However, compared to the tenancy situation prevailing in the late sixties, the situation in the eighties became more complex and highly selective (of tenants). Of late, the landlord- tenant relations assumed the character of exploitation, especially in the credit, labour and product markets.

IV. Compared to the taluk, the non-agrarian economy of the village was not that much stronger. Only very few H.Hs were engaged in the full-time non-agricultural occupations. Though the literacy level of the village was high, the number of persons engaged in regular salaried employment was negligible. And these happened despite the proximity of the village to the metropolitan city of Madras and to the industrial town of Gummidipundi. Most of the non-agricultural activities of the village were casual and temporary in nature. Some of the subsidiary occupations such as dairying and sheep rearing had not received the required attention from the H.Hs of the village. However, even among different categories of H.Hs who participated in non-agricultural activities the big farmer's share of total income was the largest in 1985-86. The total income earned by all the H.Hs from all non-agricultural occupations or activities had worked out to about one fifth of the grand total of income earned from both agricultural and non-agricultural sources. Nevertheless, the earning of non-agricultural incomes by the H.Hs had helped to reduce at least the concentration of total incomes to some extent in the village in 1985-86.

V: The implementation of public programmes, especially that of H.H beneficiary-ones had largely concentrated on agricultural labourers and tenants who mostly belonged to the scheduled castes. Very few from the non-scheduled caste H.Hs had benefited from the implementation of these programme in the village.

But the implementation of these programme had only increased the asset ownerships but not the incomes of the beneficiary H.Hs. One of the major non-H.H.beneficiary programmes implemented in the village was the improvement of the tank undertaken by the P.W.D with the huge financial assistance (Rs.18.18) provided by the European Economic Community (EEC) in 1985-86. But the implementation of this programme had helped the non-resident contractors and labourers more than the resident contractors and labourers. As far as the distribution of essential commodities through the fair price shop in the village was concerned, it was observed that only the big farmers had taken greater advantage of it.

As far as the utilisation of common property resources (CPRs) was concerned, the free collections of fish and fruits from the tank waters and the village trees were no longer allowed. From the mid-seventies they had all been auctioned to the non-resident traders. They fetched a total income of about Rs.3000 per year. A few big farmers of the village were incharge of both auctioning of CPRs and spending those incomes from the mid-seventies. Despite the accumulations of CPR incomes in the hands of a few big farmers, the cultural festivals of the three temples remained suspended from 1981. Also one of the 3 temples which was badly damaged in the 1983 cyclone was not renovated. However, the suspension of cultural festivals had also to some extent affected the employment and earnings of resident artisanal and service H.Hs who received a regular share of incomes from the festivals.

VI: Despite the rapid transformation of traditional agriculture, intensive implementation of H.H.beneficiary programmes, and the proximity of the village to the metropolitan city and industrial town, there prevailed very high levels of poverty in 1985-86, Compared to the different levels of poverty prevailing in the rural economy of Tamil Nadu in 1983, almost all levels of "absolute", "relative", "abject", and "intensity" of poverty were all higher in the village in 1985-86. And the higher levels of poverty prevailing in the village had also

been associated with higher level of income inequalities in 1985-86. Consequently, the poor groups of H.Hs such as the small and marginal farmers, tenants, agricultural labourers and artisanal and service H.Hs were forced to borrow more even for unproductive purposes at higher interest rates.

What precisely explained the higher levels of poverty prevailing in the village in 1985-86 were the following:
1) high per acre costs of cultivation associated with the lower net returns earned from agriculture, especially in the farms below 5 acres; 2) employment of a very high proportion of non resident labourers in agriculture was associated with only a small rise in the real wage rates paid to casual agricultural labourers in the village; 3) sharp reductions in the employment of both permanent farm servants and cowherds who were previously paid their annual kind wages by the cultivators of the village; 4) substitution of local manufactured wooden agricultural implements for the urban manufactured agricultural implements which resulted in a heavy loss of employment and earnings to the artisanal H.Hs in the village; 5) the increased purchases of urban based goods and services also resulted in the reduction of employment and earnings to the service H.Hs of the village; 6) the sharp rise in the prices of consumer goods by 4 to 5 times (in current prices) even within a period of one and a half decades resulted in the erosions of real incomes earned by the poor groups of H.Hs in the village; 7) very uneconomical terms and conditions of tenancy prevailing in the village; 8) high level of landlessness of the H.Hs; 9) utilisation of common and public property resources (CPRs and PPRs) resulted in not improving the net incomes of the poor H.Hs in any significant manner; 10) the discrimination against the poor groups of H.Hs in the credit market resulted not only in the higher amounts paid as interest but also in the loss of property by the poorer H.Hs to the creditors; and 11) the sharp reduction in the use of draught animal labour power in agriculture resulted in net loss of incomes to the poor groups of H.Hs who supplied it for a charge in the village.

Appendix-I

A note on the methodology adopted for the study

For the collection of data we had conducted both census and sample surveys in the village. In addition, we had also conducted a purposive sampling enquiry of 10 elderly persons in the village. The census survey concentrated on the collection of data on a)population, b)literacy c)workforce d)present and past occupational status e)land ownership f) leasing-in and leasing-out, g)ownership of livestock and agricultural implements h) employment and incomes earned from non-agricultural activities and i)benefits derived from the implementation of public programmes in the village etc. The census survey of households in the village had not only helped us to cross check the data collected from the official records such as on land ownership but also helped us to select the households for a random sample survey in the village. For the random sample survey, we had selected 66 households based on the criteria of "major source of income" and "land ownership". The households for whom the cultivation of owned land provided the major source of income are further sub-grouped into 4 categories of big,medium small and marginal farmers in the village based on their extents of land ownership. Thus, we had classified the households of the village into 8 categories viz. 1) big farmers 2)medium farmers 3) small farmers 4) marginal farmers 5)tenants 6)agricultural labourers, 7)non-agricultural labourers and 8)artisanal and service households. While we had included the a)regular salaried persons, b)businessmen and traders, c)semi-permanent labourers engaged in various non-agricultural occupations d)masons and e)those who derived their major source of income from the government's social security schemes in the category of "non-agricultural labourers" the village carpenter, blacksmith, barber and the Priest were included in the category of "artisanal and service households". However, for the collection of data and analysis the household remained the unit of analysis.

The random sample survey was mainly aimed at the collection of data on a) labour utilisation in agriculture, b) costs of cultivation, c) production and distribution of agricultural produce, d) employment and e) the net incomes earned by the households from different sources. The data collected through the random sample survey had helped us to estimate the total production and distribution of agricultural produce in the village along with the marketable surplus of agriculture. Again, the estimates of income and poverty were also based on the data collected through the random sample survey. Thus, while the census survey had helped us to obtain the current data, the sample survey had helped us mainly in estimating some of the crucial aspects of the village economy such as poverty and income distribution.

The purposive sampling survey of 10 elderly persons in the village had helped us to understand the dynamics agro-economic development of the village during the last 15 years ie. from 1970-71 to 1985-86. Through the survey, we tried to collect the information mainly on changes in a) landownership and tenancy b) livestock c) agricultural mechanisation, d) production and distribution of agricultural produce, e) costs of cultivation and labour utilisation f) wage and price levels, g) economic condition of different socio-economic groups and h) in and out - migration, etc.

The study had adopted 2 reference periods. For the study of the dynamic aspects of the village economy the reference period was from 1970-71 to 1985-86. For the study of current economic situation the reference year was 1985-86. However, the study has given more thrust for the understanding of the various aspects of the village economy in the mid-80 s. The reference year of 1985-86 was only a normal agricultural year due to which the agricultural economy of the village had not faced any adverse natural conditions. Infact, the district in which it was located viz., chingleput had received more than 50 p ercent of (1800 m.m.)

its average annual rainfall (1200 m.m.) in 1985-86. And even in the drught year of 1984-85 in which the state had below (791.40 m.ms) the normal (943.80 m.m.) rainfall, the district of chingleput had received its normal rainflll of around 1200m.ms. And this only shows that the village had not experienced any lagged effects of 1984-85 drought in 1985-86. Of course, the availability of data on cropping pattern at the village level from the official records did support the above conclusion.

APPENDIX-II

Modernisation of tank irrigation in Enathimelpakkam Village

The tank is situated in the South-Western direction of Enathimelpakkam Village. In 1985 the Public Works Department (PWD) of the government of Tamil Nadu had chosen this tank for modernisation with the financial assistance of Rs. 18.8 lakhs provided by the European Economic Community (E.E.C.). The reasons provided for the selection of this tank for modernisation were: a) the frequent occurence of breaches to its tank bund, b) formation of silt in the tank bed, c) defunct of main sluice and the d) wastage of water due to lack of pucca field channels in the registered ayacut of the tank. The programmes undertaken by the PWD for modernisation under the EEC's financial assistance were the followings: a) de-siltation of the tank bed, b) strengthening of the existing earthern tank bund with the red soil and providing revetment to the same (meaning facing of masonry concrete on an embankment) c) construction of a new sluice in the place of the old one and d) the construction of pucca field channels in the agricultural ayacut of the tank upto the limit of 10 hectares in 2 different directions. The objective of modernisation as specified by the PWD was mainly "to bring the tank to its proper standard". The Enathimelpakkam tank being a PWD one the execution of the work related to its modernisation was also entrusted to the same department. The modernisation of this tank was supposed to be completed within 2 years time from July 1985.

Let us now move on to the analysis of some aspects of tank irrigation in this village. According to the information provided by the P.W.D. the tank has a total water spread area of about 3.48 million square feet. The length of its earthern bund is 2040 metres with a width of 2 metres. The tank is mainly fed by a canal linked to the Araniar River which is some 12 k.m.s. away from the village. Recently the government had constructed

a check dam on this river at Ananthanaikan Kuppam village to help increase the water supply to some tanks located in the taluk through that canal. However, the total water storage capacity of Enathimelpakkam tank is 11.34 million cubic feet with the dead storage capacity being nil. The tank receives 4 fillings in a year. And the total annual storage capacity of the tank is 22.68 million cubic feet. The tank has a free catchment area of about 1.50 square miles and the intercepted catchment area is about 3.56 square miles with the equivalent catchment area of about 2.21 square miles. The nearest rainfall recording station is in Ponneri which is at a distance of about 15 kms from this tank. The average annual rainfall recorded in the station in the last 50 years (up to 1950) was around 1225 milli metres (mm). Out of this, while the North East monsoon (October to December) accounted for 733 m.m.s, the South West Monsoon (June-to September) accounted for 400 m.m.s. The other 2 seasons accounted for just 92 m.m.s.

The tank has a registered ayacut of 364.49 acres. In which it irrigated 324.49 acres in the first season (September to February) and 36.56 acres in the second season (February to May). Thus, tank irrigates in both the seasons a total area of about 361.05 acres. The agricultural ayacut has 20 borewells which irrigate the rest of 40 acres in the first season. After meeting the water requirements of the first season crop the tank is normally left with a balance of 3.73 million cubic feet of water for irrigation in the second season.

According to PWD, the modernisation of the tank would not result in any improvement in the original water storage capacity of (11.34 million cubic feet) the tank. But this would lead to the better management of available irrigation water in the tank. PWD hopes to stabilise the tank irrigated areas at 354.49 acres in the first season. and 36.56 acres in the second season i.e. it (PWD) expects to increase the total area under tank irrigation by about 30 acres after the modernisation of the tank. In order to increase this extent of area

under tank irrigation the PWD and the agricultural engineering departments want to introduce rotational irrigation system (called warabandi) in which the main aim is to minimise the wastage of water by taking the water from the tank to the last field in the ayacut at the quickest possible time. In doing so, the government agencies want to form a farmer's association in the village and guide them properly for the better management of available irrigation water in the tank in any given year.

Normally paddy is cultivated in all the 3 seasons of a year. The yield rate of high yielding varieties of paddy reported in the ayacut in the early 80 s (81-82) was around 1600 kgs or 20 bags (of 80 kgs) per acre which was higher than the state average of 781 kgs or 9.76 bags per acre at that time. And this is double the average yield rate of paddy obtained at the state level. There are roads in the ayacut upto the extent of 40 hectares which greatly help the farmers to transport their produce. However, the maintenance of field channels and the grading of lands etc beyond the 10 hectare limit were expected to be undertaken only by the Agricultural Engineering Department rather than by the PWD. Anyhow, the governmental agencies believe that the modernisation of the tank undertaken with the financial assistance of EEC, would greatly help in increasing agricultural production and productivity in the ayacut in the years to come.

Appendix - III

A note on contract labour system in Enathimelpakkam Agriculture

With the modernisation of agriculture the employment of casual agricultural labourers in some sepcific operations like transplanting and harvesting have been replaced by the contract labourers especially from the mid-seventies. The contract labourers belonged to both native and other villages. There were some 4 or 5 agricultural labour leaders belonging to the scheduled castes of the native village who were primarily engaged in the arrangment of contracts for both transplanting and harvesting operations. But the contractor pays only the casual labour wage rates to the labourers engaged either in transplanting or in harvesting. For transplanting an acre of paddy the farmers of this village generally pay about Rs.150 which includes the wages paid for plucking of seedlings. Normally while 10 females were engaged in transplanting 2 males were engaged in carrying the same to the field etc. The contractor also participates in the plucking seedlings as one of the 2 labourers required for this operation. He pays Rs.9 per female labourer per day and Rs.12 per day per male labourer. Totally, he pays about Rs.100 to all other 11 labourers engaged in transplanting an acre of paddy and takes the rest of Rs.50 to himself which of course includes his wage of Rs.12. But, he being a contractor earns a net minimum profit of about Rs.30 per acre. But this contract labour system was widely prevalent in the Samba season (September-January) when the demand for female labourers were high due to the transplanting of almost all the cultivated area in the village. However, some farmers of the village also engaged the casual agricultural labourers for this operation on their own. But this was more only in the Sornavari season (May-September) when the demand for female labourers were less due to the cultivation of only half of the total cultivated area in the village.

As far as the harvesting of paddy was concerned only the contract and migrant labourers were engaged by the farmers of this village whatever may be the season. And no casual labourers were employed in this operation. But, the contract wage rates paid per acre of harvesting varies widely across the seasons depending on the demand for labour and across the farms depending on their distances to the threshing floor. They also vary for local and migrant labourers engaged in the harvesting of paddy. Thus, the contract wages paid per acre of harvesting varied from a minimum of Rs.300 to a maximum of Rs.450 in the year 1985-86. Again, in this operation also the contractors never shared the contract wages equally with the labourers instead they preferred to pay only the fixed cash wage rates to their labourers at the rates of Rs.13 per male, per day and Rs.11 per female, per day. Here it is also worth noting the fact that in this village, even the harvest wages were paid only in cash rather than in kind in which case the grains could have been equally shared by all the labourers engaged in this operation. The payment of cash wage rates even for this kind of operation only helped the contractors to conceal the actual negotiated contract wage rates with the farmers and also pay less to the labourers there by earning the maximum net profit from the arrangement of these contracts. Normally, the contract labour leaders earn a minimum of Rs.50 per every acre of contract with a mere supervision of the work without providing any physical labour. Unfortunately, the contract labour leaders also belonged to the same caste group of agricultural labourers. And hence such things could continue without any protest. But the big farmers of the village used to employ the migrant labourers for harvesting and pay them in kind which works out to a minimum of Rs.300 per acre. Big farmers also benefit greatly by employing the migrant labourers and by conceiving the actual extent of area harvested from the latter which is not possible if they employ the local labourers who are more knowledgeable about the extent of area harvested. The migrant labourers were engaged mainly in the harvesting of

samba season crop rather than the other season's crops. In other seasons even the big farmers prefer to employ only the local labourers because the contract wage rates used to fall in those seasons. Any how, compared to the other categories of farmers, the big farmers of the village mostly employed only the cheap labour for harvesting work in their farms. Hence, the major beneficieries of contract labour system were the contract labour leaders and big farmers rather than the agricultural labourers and the small peasants.

NOTES AND REFERENCES

1. This is not the first time a village was selected for study from the northern coastal region of Tamil Nadu. Way back in 1961, as part of its Village study programme in the State, the census of India had selected Sunnambukulam from the same region. Sunnambukulam was one of the 31 villages carefully studied by the census. It was located about 10 kilometres north of Enathimelpakkam Village. See "Sunnambukulam" village survey monograph No. 28, Census of India 1961, Vol. Ix, part VI.

2. The ownership of considerable proportion of total land in any village by the non-residents is only a common feature of the rural economy of Tamil Nadu. It varies from a minimum of one-fourth to a maximum of one-half of the total land owned in any village. For instance, the resurvey of Palakurichi, a village in Thanjavur district, showed that about 64 per cent of the total H.Hs owning land in that village belonged to other villages and towns. And these non-resident land owners totally owned about 34 per cent of the total land owned by all the households. However, the non-resident ownership of land in Enathimelpakkam Village may be somewhat higher. See, "Palakurichi: A Resurvey" by S.Guhan Working Paper No. 42, Madras Institute of Development Studies, 1983.

3. Andre Beteille had also observed in one of the villages in Thanjavur district viz; Sripuram that it was only the non-residents rather than the residents who mostly bought and sold lands in that village for a long time. See "Caste, Class and Power - changing Patterns of stratification in a Tanjore Village" by Andre Beteillee, University of California Press, 1971.

4. The Gini Coefficient was estimated by the trapezoidal approximation method, namely,

$$G = 1 - \sum_{i=1}^{n} \Delta p_i (q_i + q_{i-i})$$

5. Some of the resurveys of slater villages in TamilNadu had already reported sharp declines in the ownership of draught animals. See, for instance, "Iruvelpattu Revisited" by S.Guhan and Joan P.Mencher, working paper No. 28, Madras Institute of Development Studies, 1982 and "Palakurichi: A Resurvey", op. cit.

6. The sharp decline in the area under tenancy over the years had also been reported in some of the villages like Iruvelpattu and Dusi in Tamil Nadu. See, "Iruvelpattu Re-Visited", Ibid; and "Dusi: A Resurvey" by S.Guhan and K.Bharathan, working paper No.52, Madras Institute of Development Studies, 1984.

7. One of the studies conducted by the Ago-Economic Research Centre (A.E.R.C.), Madras in some of the villages of Chingleput district in 1968-69 estimated the per acre costs of cultivation of traditional varieties of paddy as at Rs. 241.15 excluding the rent. See, "Evaluation of High Yielding varieties Programme in Chingleput district, Tamil Nadu, "1969.

8. The A.E.R.C. study had also estimated the average net profit earned from the cultivation of traditional varieties of paddy in the Chingleput district in 1968-69 at Rs. 458.40 per acre. See, Ibid.

9. In some of the villages of Tamil Nadu the average yield rate of HYV paddy reported in the early 80s was around 1700 kgs or 21.25 bags (of 80kgs each) per acre. Hence the average yield rate of HYV paddy reported in our village for the mid-80s only coincided with the yield rates achieved in some other Villages of Tamil Nadu in the 80s, See "Dusi: A Resurvey", Op.Cit; and (2) " Vadamalaipuram: A Resurvey" by V.B. Athreya, Working Paper No.50, Madras Institute of Development Studies, 1984.

10. The average net income earned from an acre of paddy cultivation in some of the villages of Tamil Nadu between 1981 and 1985 was shown to be varying from a minimum of Rs. 1035 to a maximum of Rs. 1590. See, for instance; "Gangaikondan 1916-1984; "Change and Stability" by V.B. Athreya Working Paper No.56, Madras Institute of Development Studies, 1985. " Palakurichi: A Resurvey" Op.Cit; "Vadamalaipuram: A Resurvey" Op.Cit; "Iruvel-pattu Revisisted" Op.Cit; and "Dusi: A Resurvey", Op.Cit.

11. It had already been observed in some of the resurveys of Slater Villages in Tamil Nadu that the large and medium farmers rather than the small and marginal farmers had benefited more from the new technologies introduced in agriculture. See, "Iruvelpattu Revisited" Op.Cit; and "Vadamalaipuram: A Resurvey" Op.Cit.

12. In one of the resurveys of Slater villages in Tamil Nadu viz; Palakurichi it was noted that about 93 per cent of the total credit provided by the co-operative society at low interest rates had been availed only by the large and medium farmers of that village. See. "Palakurichi: A Resurvey" Op.Cit.

13. One of the studies conducted in North Arcot Villages (Random) showed that on an average 82 casual human labour days were employed per acre in the cultivation of HYV paddy. See, "Implications of Changes in Agriculture for Social relationships at the Village Level: the case of Random", by John, Harriss in B.H.Farmer (edited) Green Revolution Technology and Change In Rice Growing Areas of Tamil Nadu And Sri Lanka; Maxmillan Press 1977.

14. The larger number of days of employment for females compared to the males was also observed in some other villages in the state like Vadamalaipuram. See, "Vadamalaipuram: A Resurvey" Op.Cit.

15. Some of the resurveys of Slater villages in Tamil Nadu in the early 80s had revealed that the annual average income of an agricultural labour H.H. from all sources was varying from a minimum of Rs. 2000 to a maximum of Rs. 2300. See, the Resurveys of Dusi, Palakurichi and Vadamalaipuram Op.Cit.

16. The wage data relating to our village for 1970-71 were some what closer to the actual data collected by Joan P.Mencher in some Chingleput Villages at that time. See "Agriculture and Social Structure in Tamil Nadu", Allied Publishers, 1978

17. The village price data provided by us for the year 1970-71 fairly corresponded with the price data provided for some items in the Madras markets by the official sources for the same year. See, "Agricultural Prices in India: 1963 to 1974" Issued by the Directorate of Economics and Statistics, Ministry of Agriculture and Irrigation, Government of India, New Delhi, 1976.

18. In Iruvelpattu in 1981 it was estimated that while each of the traditional artisans like carpenter, Mason and Potter earned about Rs. 2500 to Rs. 3000 per annum the non-agricultural labour H.H. earned in the range of Rs. 3600 to Rs. 6000 per year.

19. The consumer price Index for Agricultural Labourers (C.P.I.A.L) relating to Tamil Nadu for the agricultural year of 1985-86 was obtained from the "Indian Labour Journal", Vol. 28, No.8, August 1987. Published by the Labour Bureau, Ministry of Labour, Government of India.

20. The formula adopted for the calculations of Sen Index of Poverty was:

$$\left(\begin{array}{c}\text{Head}\\ \text{count}\\ \text{ratio}\\ \text{of Poverty}\end{array}\right) \times \left(\begin{array}{c}\text{Proportionate}\\ \text{income}\\ \text{gap}\\ \text{(PIG)}\end{array} + (1 - \text{PIG}) \times \begin{array}{c}\text{Gini}\\ \text{coefficient}\\ \text{of the}\\ \text{poor}\end{array}\right)$$

21. The different poverty figures relating to rural Tamil Nadu for the year 1983 were obtained from S. Subramanian's paper entitled "Poverty and Inequality in Tamil Nadu", Working Paper No.74, Madras Institute of Development Studies, 1986.

22. In some of the villages of Chingleput district of Tamil Nadu it had already been noted by S.S. Shivakumar that during the last 2 generations about 10 petty peasants had lost 20 acres of land to their creditors. See, S.S. Shivakumar's study on "Aspects of Agrarian Economy in Tamil Nadu: A Study of two Villages", in Economic and Political Weekly issues of 6th, 13th and 20th May, 1978.